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HARRIS
COMMUNICATION AND
INFORMATION PROCESSING

INTERFACE KITS FOR ADAPTING

ALPHA 40 SERIES MOBILE TELEPHONE CONTROL UNITS

TO EXISTING MOBILE TELEPHONE INSTALLATIONS

HARRIS

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ALPHA CELEBRITY LOCK CODE PROGRAMMING

THE ALPHA CELEBRITY ALLOWS THE LOCK CODE TO BE CHANGED FROM THE CONTROL UNIT BY USE OF A MASTER LOCK CODE. THE NEW LOCK CODE IS STORED INTO THE RAM (RANDOM ACCESS MEMORY) AND DOES NOT ALTER THE NAM LOCK CODE. FOR TEST PURPOSES A LOCK CODE HAS BEEN STORED INTO THE RAM AT THE FACTORY. IN UNITS WITH OLDER SOFTWARE THE RAM IS NOT UPDATED WHEN THE NAM LOCK CODE IS CHANGED. IF THE UNIT DOES NOT RESPOND TO THE NEW NAM LOCK CODE THEN USE THE MASTER LOCK CODE TO ENTER THE DESIRED LOCK CODE INTO RAM.

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716/244-5830 Cable: RFCOM; Rochester, NY TELEX 978464

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ALPHA CELEBRITY LOCK CODE PROGRAMMING

A. GENERAL INFORMATION:

Each CELEBRITY car telephone is shipped from the factory with information programmed into the RAM (Random Access Memory) within the unit. Among these codes are:

1. Lock Code--A code for restricting use of an individual ALPHA CELEBRITY car telephone in placing (but not receiving) calls. When the lock feature is in use, the car telephone cannot be used to place a call until it is unlocked by entering a user's code, as described on page 6 of the ALPHA CELEBRITY Operator's Instruction Manual (PM-10137-4080). The code can be changed to one of the user's choice as described on page 7 of the Operator's Manual, using additional information provided in this notice.

2. Preferred System Code--A code that determines which two of the cellular operating systems available in an area will provide calling service for an individual car telephone, and which of the two is the preferred choice of the user. The user may select only one system or may select a system order of preference in searching for an available channel. The order a preference can be altered as described on page 27 of the Operator's Manual. This notice contains information related to changing the order of preference.

Codes stored in the car telephone memory are retained even if external power is removed. A lithium battery supplies the voltage to retain codes and other data in RAM (Random Access Memory) when external power is removed.

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ALPHA CELEBRITY LOCK CODE PROGRAMMING

B. MASTER LOCK CODE:

A user's lock code can be changed by following the instructions on page 7 of the ALPHA CELEBRITY Operator's Instruction Manual. A user's lock code can contain any number of digits up to (8). In order to make this change, it is necessary to calculate the 8-digit Master Lock Code for the unit. This is done by multiplying 12345 by the 3-digit lock code that has been programmed into the unit's NAM. Only the dealer should make this calculation, since it involves the use of a multiplier that is confidential and is not for disclosure outside of Harris Corporation and its dealerships. If the result contains fewer than 8 digits, add as many 0's in front of the number as necessary to obtain an 8-digit number.

Example:	12345	-	multiplier
	X 123	-	NAM Lock Code
	1518435		
Add a zero:	01518435	-	Master Lock Code

Enter the Master Lock Code and new user's code as instructed on page 7 of the Operator's Manual.

The Master Lock Code may be given to the end user so that he may make future changes in the user's code; however, the formula must not be revealed since it can be used to determine the Master Lock Code for other CELEBRITY car telephones.

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C. CHANGING THE PREFERRED SYSTEM CODE:

Dealers are responsible for programming the Preferred System Code into the unit at initial power up. If, during factory test, a Preferred System Code has been entered in a unit's memory, the order of Preferred System selection may not initially agree with your programming. To check this, operate the System Select feature of the unit after programming is completed. (see page 26 of the Operator's Instruction Manual) If the selection is not in accordance with your programming, change the selection by performing the steps given on page 27 of the Operator's Instruction Manual.

D. ADDITIONAL ASSISTANCE:

If you require any additional assistance in performing the procedures described in this notice, call:
Harris Corporation/RF Communications Group at (716) 244-5830 and ask for Product Service.

WPD 6195A
D.MCCARTHY/rmt.

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INTERFACE KITS FOR ADAPTING

ALPHA 40 SERIES MOBILE TELEPHONE CONTROL UNITS

TO EXISTING MOBILE TELEPHONE INSTALLATIONS

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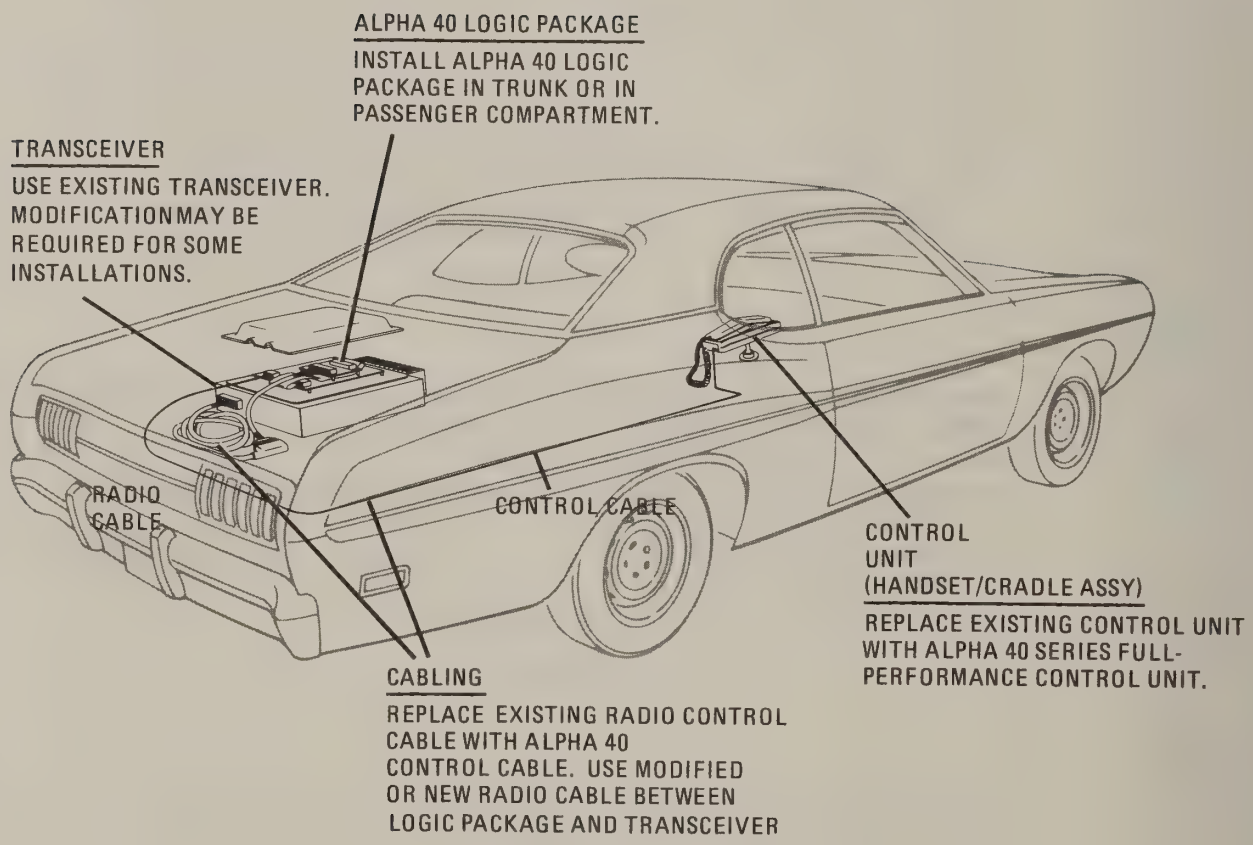


Figure 1-1. Typical ALPHA 40 Control Unit Adaptation to Existing Mobile Telephone Installation

CHAPTER 1
INTRODUCTION

CONTENTS

FIGURES

TABLES

1. GENERAL INFORMATION

1.01 The advantages and special features of ALPHA 40 Series Control Units can be added to many existing mobile telephone installations using interface kits available from Harris Corporation, RF Communications Division. Interface Kits are available to adapt the RF-4940, RF-4970, and RF-4980 ALPHA 40 Series Control Units to all of the Harris, General Electric and Motorola mobile telephone installations listed in Table A. The general procedure for a typical installation is outlined in figure 1-1. Other installations may also be adaptable; for information regarding installations not included in Table A, contact Harris Corporation, RF Communications Division, 1680 University Avenue, Rochester, New York 14610 USA. Please address inquiries to the attention of: Marketing Department, ALPHA 40.

1.02 This manual tells how to choose the correct Interface Kit for each installation listed in Table A and how to install each type of kit. In addition, theory of operation, schematic diagrams, parts lists and interconnection diagrams for the boards in the kit and their interfaces with existing installations are provided for use in maintaining the modified installations.

1.03 All of the Interface Kits described in this manual are available from Harris Corporation, RF Communications Division at the address given in paragraph 1.01, or through your mobile telephone supplier.

1.04 Typical installations are performed using the procedural sequence given below. The installation of the ALPHA 40 Control Unit is described in a separate publication supplied with the unit. The other procedures are described in this manual.

INSTALLATION SEQUENCE (Refer to figures 1-1 and 1-2)

1. Remove existing Control Unit and replace with ALPHA 40 Series Control Unit.

2. Modify installation by installing ALPHA 40 Logic Board and a special Logic Interface Board (not required in Harris installations). These boards can be mounted in the trunk or inside the passenger compartment, near the Control Unit.

3. Replace the existing Control Unit-to-Transceiver Control Cable with the ALPHA 40 Control Cable.

4. Typically a new cable, provided in the Interface Kit, is used to connect the Logic Interface Board to the Transceiver in the modified installation, or some Control Unit-to-Transceiver Control Cables can be modified with a special adaptor also available in the appropriate kits.

5. In some cases, several Transceiver modifications are required.

TABLE A
Mobile Telephone Installations That Can Be Adapted To ALPHA 40 Series Control Units

Manufacturer	Transceiver	Existing Control Unit
HARRIS (any combination of transceiver and control unit)	CT-1555, CT-450, RF-450A, RF-450, RF-150	RF-4910, RF-4911, RF-4912, RF-494, RF-495
General Electric	MASTR ®	New IMTS VP1, 2, or 4 (Line-per-channel models)
	MJ	MJ, Old IMTS
Motorola (any combination of transceiver and control unit)	UHF PULSAR ® "Old" VHF PULSAR ® "New" VHF PULSAR ® MARK VII	PULSAR ® 11, PULSAR ® 100, MARK VII, MK, MJ, FACTS
	UHF MK Series	PULSAR ® 1 MK FACTS MJ
	VHF MJ Series	PULSAR ® 1 FACTS MJ

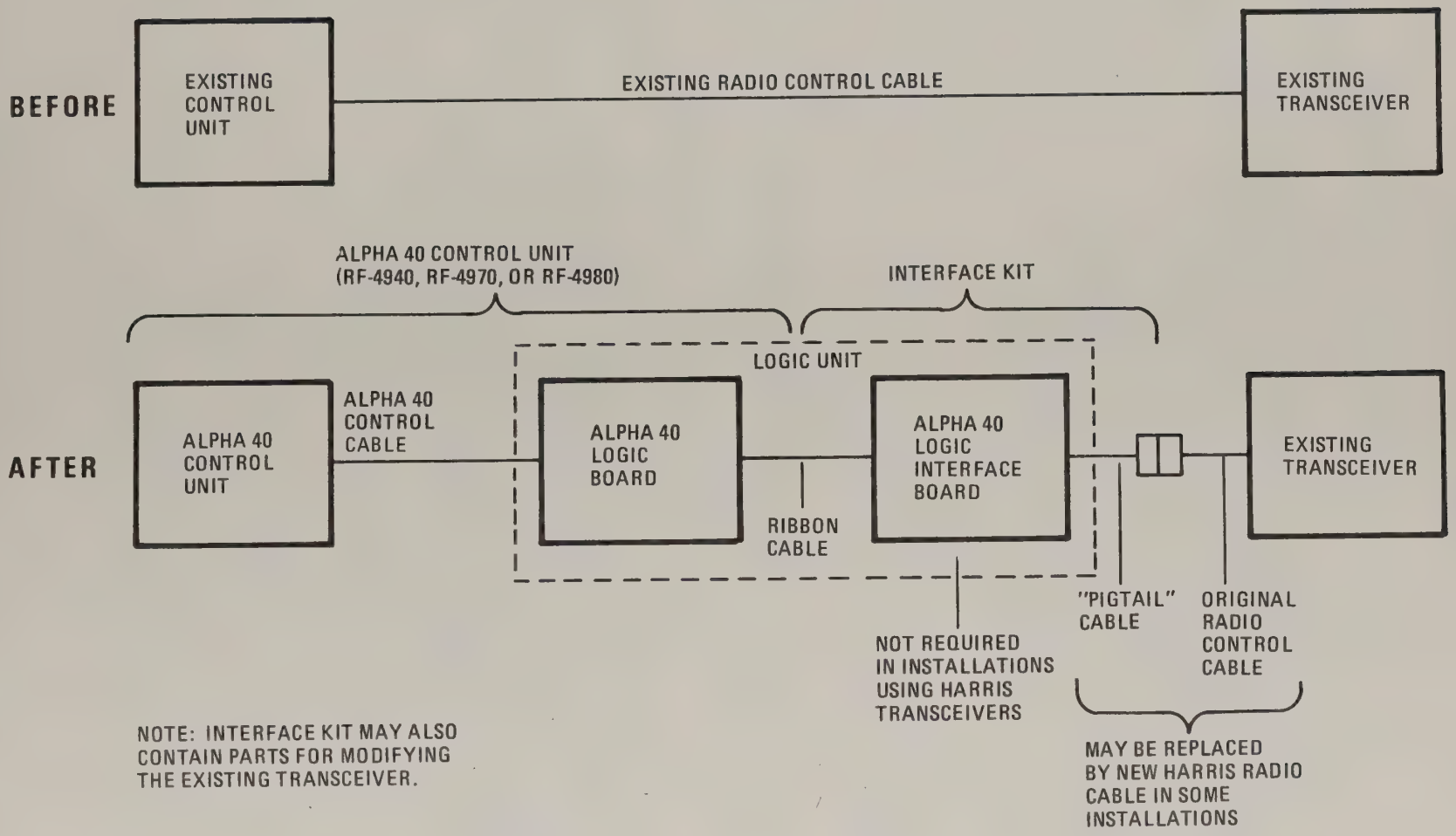
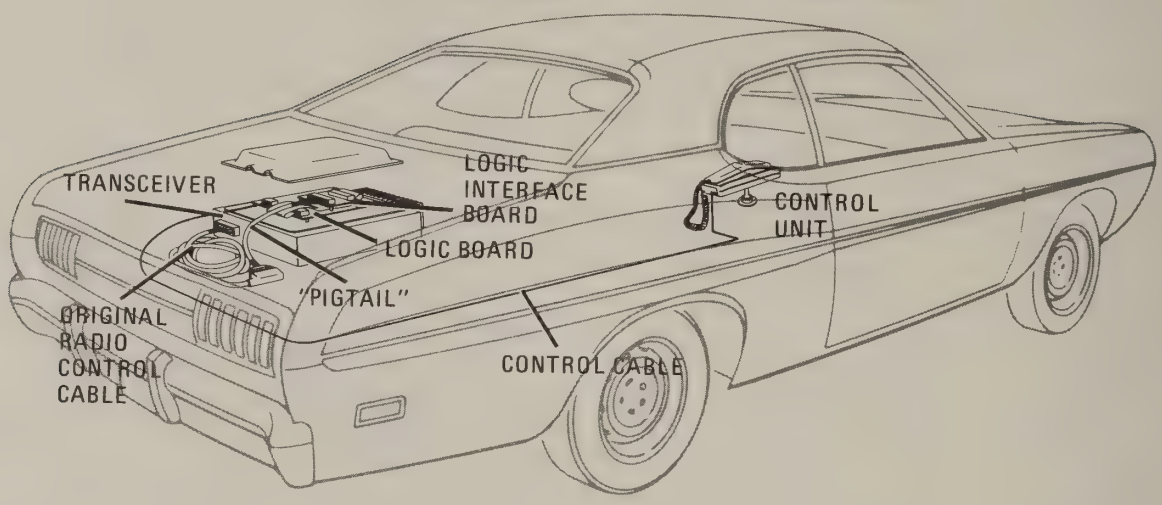


Figure 1-2. Typical ALPHA 40 Adaptation to Existing Mobile Telephone

TRUNK MOUNT CONFIGURATION



FRONT MOUNT CONFIGURATION

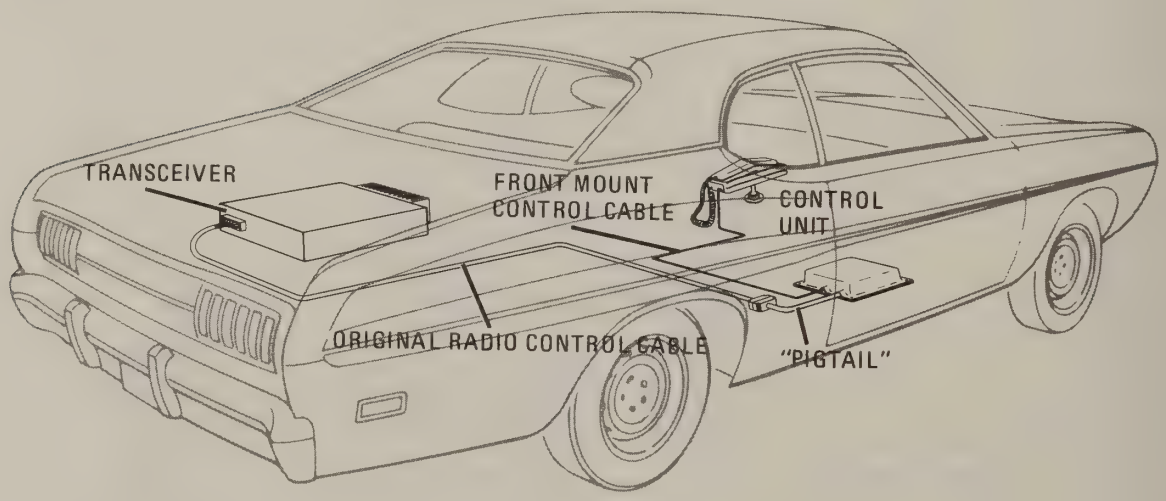


Figure 2-1. Typical ALPHA 40 Front and Rear Mount Installations

CHAPTER 2
DEFINITIONS

CONTENTS PAGE

FIGURES PAGE

1. INTRODUCTION

1.01 Terms used frequently in this manual are defined in this chapter. A brief study of these definitions will make the descriptions in later chapters easier to understand. Typical locations of the parts defined are shown pictorially in figures 1-1, 1-2 and 2-1.

LOGIC BOARD: A 7-1/2 x 7-1/2 inch printed circuit board that contains the logic circuits required for the special features of the ALPHA 40 Series Control Units. This board may be mounted in the trunk compartment, on the Transceiver, or in the passenger's compartment, near the Control Unit. The board is attached to a mounting base assembly and is covered by a protective plastic housing.

LOGIC INTERFACE BOARD: 3 x 4-1/4 inch printed circuit board that mounts on top of the ALPHA 40 Logic Board and contains the circuits necessary to interface the ALPHA 40 Logic Board to the existing Transceiver. A ribbon cable interconnects the Logic Board and Logic Interface Board. This board is not required when interfacing to a Harris Transceiver.

CONTROL CABLE: The Control Cable is a 23-foot, 9-conductor cable for trunk mount installations, or a six-foot cable for passenger compartment installations (see Front Mount Control Cable). This cable connects the cradle of the ALPHA 40 Control Unit to the ALPHA 40 Logic Board.

FULL RADIO CABLE: A three-foot Radio Cable supplied by Harris, that connects the Logic Interface Board directly to the Transceiver without using a "Pigtail" or the existing Radio Control Cable. The Full Radio Cable also includes a 23-foot, two-conductor cable that connects the battery to the Transceiver.

PIGTAIL CABLE: A short interface cable that is used in some ALPHA 40 installations to connect the Logic Interface Board and the original Radio Cable. This cable adapts the original equipment connector to the Harris connector.

FRONT MOUNT CONTROL CABLE: A six-foot version of the Control Cable, used when the Logic Board is mounted in the passenger compartment near the Control Unit. This cable is available upon request.

JUMPER PLUG: A 24-pin connector that replaces the "Supervisory Package" in the Motorola MJ Series Transceivers when the ALPHA 40 Control Unit is used with these Transceivers.

SUPERVISORY BYPASS BOARD: A 6-3/4 x 2-5/8 inch printed circuit board that replaces the Supervisory Logic Board in the Motorola VHF and UHF Pulsar ® Transceivers when the ALPHA 40 Control Unit is used with these Transceivers.

CHAPTER 3

SELECTING AN INTERFACE KIT

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TABLES PAGE

CHARTS PAGE

1. GENERAL INFORMATION

1.01 Interface kits include the parts and assemblies needed to adapt an ALPHA 40 Control Unit to each of the installations listed in Table A of Chapter 1. Ten kits and two special cables are available from Harris to make these installations. Charts 1, 2 and 3 (for Harris, General Electric, and Motorola, respectively) show how to select the kit required for any of the installations. To use Charts 1, 2, and 3, locate the existing Control Unit at the top of the chart and the existing Transceiver at the left. At the intersection of the Control Unit column and the Transceiver row will be found the kit (or choice of kits) that can be used to make the installation. Where a choice of kits is given, the choice is between re-using the existing Radio Cable (if the existing cable is of the particular type as designated on the Charts) or using a kit which includes a new Radio Cable.

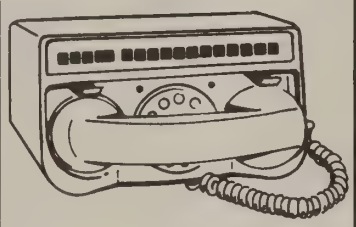
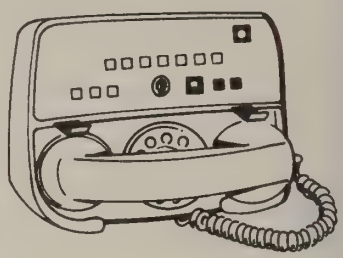
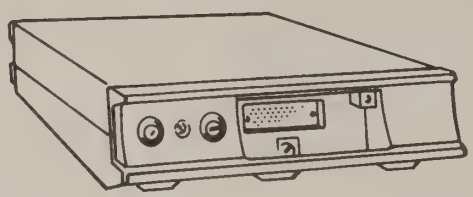
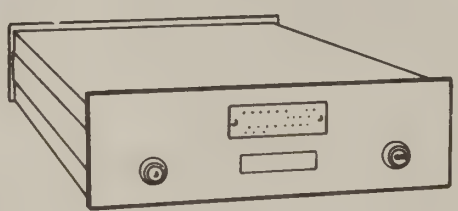
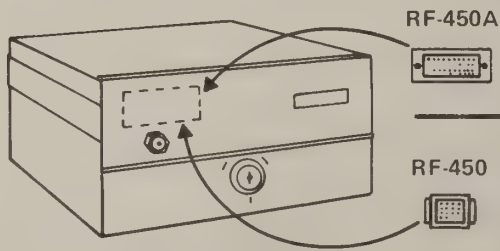
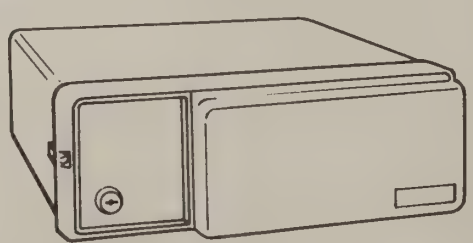
1.02 Table B gives the contents of each Interface Kit along with the Harris part numbers.

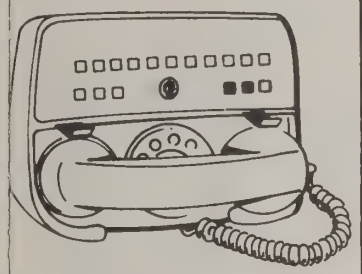
1.03 The order blank provided in this chapter may be used in placing orders, or you may call (716) 244-5830 and ask for Order Entry Information for ALPHA 40.

1.04 When kits are received from Harris Corporation, RF Communications Division, check them against Table B to make sure all parts are included.

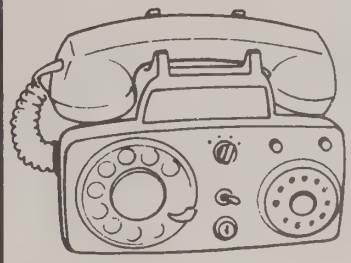
CHART 1

HARRIS ALPHA 40 INTERFACE TO HARRIS RADIOS

HARRIS CONTROL HEAD BEING REPLACED / HARRIS RADIO INSTALLED	 RF-4910/11/12	 RF-494/5
 CT-1555	HARRIS OPTION **RF-4940-08** OR HARRIS OPTION **RF-4940-21** (NEW RADIO CABLE)	
 CT-450		
 RF-450A RF-450		
 RF-150	HARRIS OPTION **RF-4940-08**	



MJ



③ EXISTING MJ CABLE	NEW CABLE	③ EXISTING MJ CABLE	NEW CABLE
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
ARRIS OPTION RF-4940-12	HARRIS OPTION RF-4940-13	HARRIS OPTION RF-4940-12	HARRIS OPTION RF-4940-13

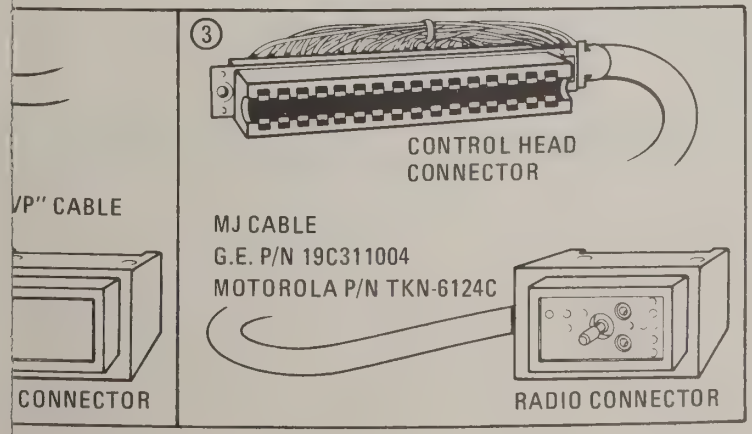


CHART 1

HARRIS ALPHA 40 INTERFACE TO HARRIS RADIOS

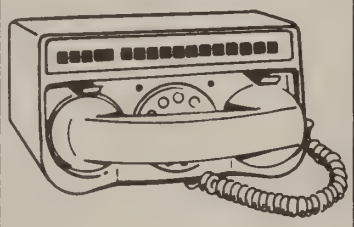
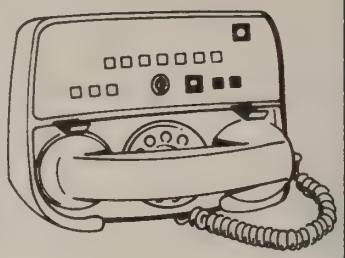
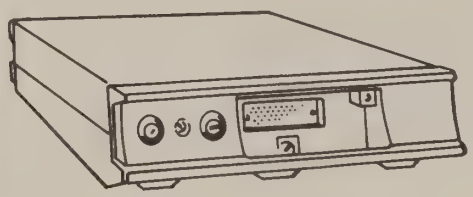
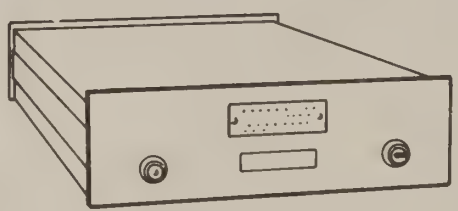
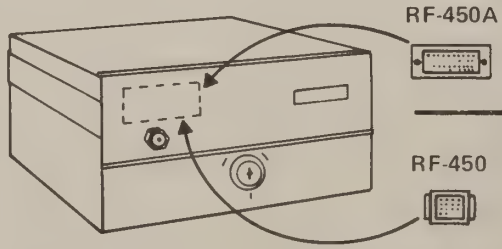
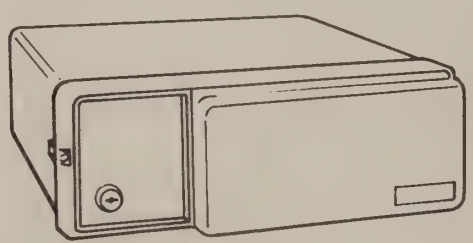
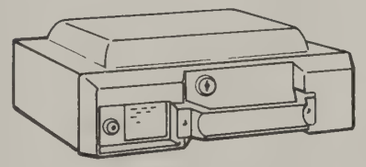
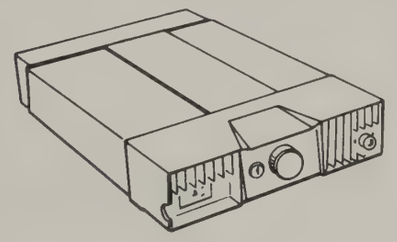
HARRIS CONTROL HEAD BEING REPLACED / HARRIS RADIO INSTALLED	RF-4910/11/12 	RF-494/5 
CT-1555 		
CT-450 	HARRIS OPTION **RF-4940-08** OR HARRIS OPTION **RF-4940-21** (NEW RADIO CABLE)	
RF-450A / RF-450 		
RF-150 	HARRIS OPTION **RF-4940-08**	

CHART 2

HARRIS ALPHA 40 INTERFACE TO GENERAL ELECTRIC RADIOS

G.E. CONTROL HEAD BEING REPLACED / G.E. RADIO INSTALLED		IMTS		VP1, 2, OR 4		MJ			
		② EXISTING "VP" CABLE	NEW CABLE	② EXISTING "VP" CABLE	NEW CABLE	③ EXISTING MJ CABLE	NEW CABLE	③ EXISTING MJ CABLE	NEW CABLE
 MASTR®	① LINE PER CHAN	HARRIS OPTION RF-4940-08	HARRIS OPTION RF-4940-22	HARRIS OPTION RF-4940-08	HARRIS OPTION RF-4940-22	N/A	N/A	N/A	N/A
	① BINARY	HARRIS OPTION RF-4940-07	HARRIS OPTION RF-4940-15	N/A	N/A	N/A	N/A	N/A	N/A
 MJ		N/A		N/A	N/A	HARRIS OPTION RF-4940-12	HARRIS OPTION RF-4940-13	HARRIS OPTION RF-4940-12	HARRIS OPTION RF-4940-13

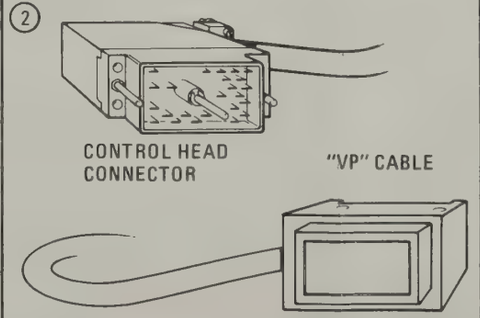
NOTES

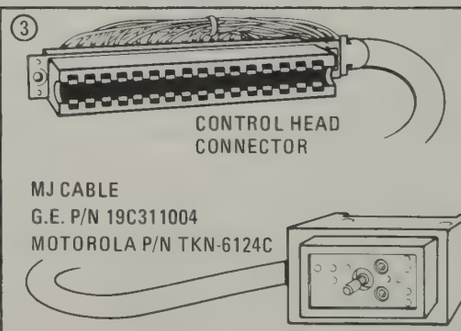
① THE MASTR® RADIO CAN BE EITHER LINE PER CHANNEL OR BINARY CHANNEL CONTROL. THE DISTINCTION CAN BE MADE IN THE MODEL NUMBER. IF THE 8th DIGIT IS AN X THE RADIO IS BINARY CONTROL. IF IT IS A Y IT IS LINE PER CHANNEL CONTROL.

e.g.,

CX55RFXX88A = BINARY

CX55RPXY88A = LINE PER CHANNEL

② 

③ 

MK		FACTS		MJ	
		EXISTING MJ CABLE*	NEW CABLE	EXISTING MJ CABLE*	NEW CABLE
ANGE DIO ERFACE 12/14) TOROLA TRN6512A OR USE RRIS ION 940-16	CHANGE RADIO INTERFACE TO PULSAR 100 MOTOROLA P/N TRN8366A **AND USE** HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-11**	HARRIS OPTION **RF-4940-16**	HARRIS OPTION **RF-4940-11**	HARRIS OPTION **RF-4940-16**
ANGE DIO ERFACE MJ TOROLA TLN5249A OR USE RRIS ION 940-14	CHANGE RADIO INTERFACE TO PULSAR 100 MOTOROLA P/N TRN8367A **AND USE** HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-06**	HARRIS OPTION **RF-4940-14**	HARRIS OPTION **RF-4940-06**	HARRIS OPTION **RF-4940-14**
HARRIS OPTION **RF-4940-17**		HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**
N/A		HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**

* *See Note 3 on Chart 2.*

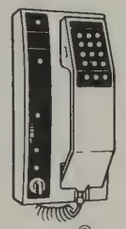
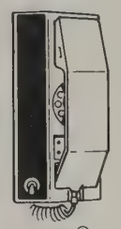
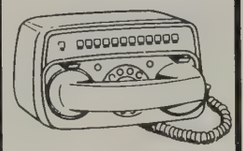
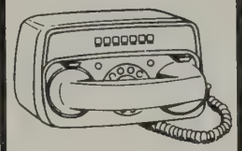
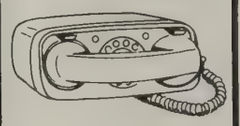
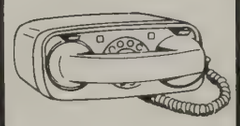
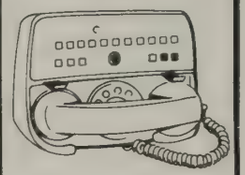
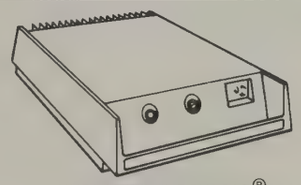
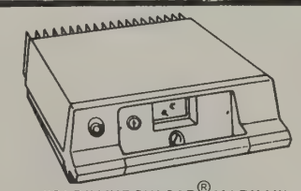
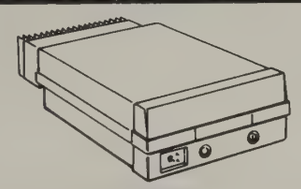
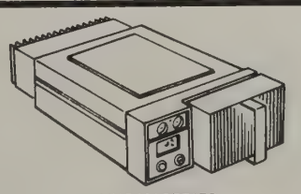
TABLE B
ALPHA 40 Interface Kits, Parts Numbers, and Kit Contents

Kit Number	Harris Part No.	Kit Contents												
		Logi Interface Bd. 6624-3261	Logic Interface Bd. 6624-3262	Logic Interface Bd. 6624-3263	Harris Radio Cable 6624-5200	GE Radio Cable 6624-5221	Motorola Radio Cable 6624-5211	"Pigtail" Cable 6624-3245	"Pigtail" Cable 6624-3246	Ribbon Cable W-1889	MK/KS Jumper Plug 6624-3265	"Old" VHF Pulsar R Supervisory Bypass Board 6624-3270	UHF and "New" VHF Pulsar R Supervisory Bypass Board 6624-3280	15 Amp Fuse F-0102
RF-4940-04*	6624-3200	X						X		X	X			
RF-4940-06	6624-3201	X						X		X		X		
RF-4940-07	6624-3202			X					X	X				
RF-4940-08	6624-3203								X					
RF-4940-11	6624-3204	X						X		X			X	
RF-4940-13**	6624-3206	X					X			X	X			X
RF-4940-14	6624-3207	X					X			X		X		X
RF-4940-15	6624-3208			X		X				X				X
RF-4940-16	6624-3209	X					X						X	X
RF-4940-18	6624-3211		X				X			X		X	X	X
RF-4940-21	6624-5200				X									X
RF-4940-22	6624-5221					X								X

* RF-4940-04 same as RF-4940-12

** RF-4940-13 same as RF-4940-17

CHART 3
HARRIS ALPHA 40 INTERFACE TO MOTOROLA RADIOS

MOTOROLA — CONTROL HEAD BEING REPLACED / MOTOROLA — RADIO INSTALLED	 PULSAR® II	 PULSAR® 100	 PULSAR® 1		 MARK VII	 MK	 FACTS		 MJ	
			EXISTING MJ CABLE*	NEW CABLE			EXISTING MJ CABLE*	NEW CABLE	EXISTING MJ CABLE*	NEW CABLE
 UHF/"NEW" VHF PULSAR®	CHANGE RADIO INTERFACE TO (12/14) MOTOROLA P/N TRN6512A **AND USE** HARRIS OPTION **RF-4940-16** OR CHANGE RADIO INTERFACE TO PULSAR 100 MOTOROLA P/N TRN 8366A **AND USE** HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-11**	HARRIS OPTION **RF-4940-16**	HARRIS OPTION **RF-4940-16**	CHANGE RADIO INTERFACE TO (12/14) MOTOROLA P/N TRN6512A **AND USE** HARRIS OPTION **RF-4940-16** OR CHANGE RADIO INTERFACE TO PULSAR 100 MOTOROLA P/N TRN8366A **AND USE** HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-11**	HARRIS OPTION **RF-4940-16**	HARRIS OPTION **RF-4940-11**	HARRIS OPTION **RF-4940-16**
 "OLD" VHF PULSAR® MARK VII	CHANGE RADIO INTERFACE TO MJ MOTOROLA P/N TLN5249A **AND USE** HARRIS OPTION **RF-4940-14** OR CHANGE RADIO INTERFACE TO PULSAR 100 MOTOROLA P/N TRN8367A **AND USE** HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-06**	HARRIS OPTION **RF-4940-14**	HARRIS OPTION **RF-4940-14**	CHANGE RADIO INTERFACE TO MJ MOTOROLA P/N TLN5249A **AND USE** HARRIS OPTION **RF-4940-14** OR CHANGE RADIO INTERFACE TO PULSAR 100 MOTOROLA P/N TRN8367A **AND USE** HARRIS OPTION **RF-4940-18**	HARRIS OPTION **RF-4940-06**	HARRIS OPTION **RF-4940-14**	HARRIS OPTION **RF-4940-06**	HARRIS OPTION **RF-4940-14**
 UHF MK SERIES	N/A	N/A	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**	N/A	HARRIS OPTION **RF-4940-17**	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**
 VHF MJ SERIES	N/A	N/A	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**	N/A	N/A	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**	HARRIS OPTION **RF-4940-12**	HARRIS OPTION **RF-4940-17**

** See Note 3 on Chart 2.*

TABLE B
ALPHA 40 Interface Kits, Parts Numbers, and Kit Contents

Kit Number	Harris Part No.	Kit Contents												
		Logi Interface Bd. 6624-3261	Logic Interface Bd. 6624-3262	Logic Interface Bd. 6624-3263	Harris Radio Cable 6624-5200	GE Radio Cable 6624-5221	Motorola Radio Cable 6624-5211	"Pigtail" Cable 6624-3245	"Pigtail" Cable 6624-3246	Ribbon Cable W-1889	MK/KS Jumper Plug 6624-3265	"Old" VHF Pulsar R Supervisory Bypass Board 6624-3270	UHF and "New" VHF Pulsar R Supervisory Bypass Board 6624-3280	15 Amp Fuse F-0102
RF-4940-04*	6624-3200	X						X		X	X			
RF-4940-06	6624-3201	X						X		X		X		
RF-4940-07	6624-3202			X					X	X				
RF-4940-08	6624-3203								X					
RF-4940-11	6624-3204	X						X		X			X	
RF-4940-13**	6624-3206	X					X			X	X			X
RF-4940-14	6624-3207	X					X			X		X		X
RF-4940-15	6624-3208			X		X				X				X
RF-4940-16	6624-3209	X					X						X	X
RF-4940-18	6624-3211		X				X			X		X	X	X
RF-4940-21	6624-5200				X									X
RF-4940-22	6624-5221					X								X

* RF-4940-04 same as RF-4940-12

** RF-4940-13 same as RF-4940-17

ALPHA 40 INTERFACE KITS

Order Form

Date:_____

HARRIS CORPORATION
RF Communications Division
1680 University Avenue
Rochester, New York 14610 USA
(716) 244-5830

ATTN: Marketing Department
ALPHA 40 Orders

Please send the following ALPHA 40 Interface Kits to the address below. Please include Purchase Order Number in the space provided below.

Qty _____ RF-4940-04
Qty _____ RF-4940-06
Qty _____ RF-4940-07
Qty _____ RF-4940-08
Qty _____ RF-4940-11
Qty _____ RF-4940-13
Qty _____ RF-4940-14
Qty _____ RF-4940-15
Qty _____ RF-4940-16
Qty _____ RF-4940-18
Qty _____ RF-4940-21
Qty _____ RF-4940-22

☐ Please send Price Catalog

Purchase Order No. _____

To: Company Name _____

Address _____

City, State, ZIP Code _____

Signed _____
AUTHORIZED SIGNATURE

CHAPTER 4

INSTALLATIONS WITH HARRIS TRANSCEIVERS

CONTENTS PAGE

TABLES PAGE

FIGURES PAGE

1. GENERAL INFORMATION

1.01 Before beginning the installation, it must be decided whether to locate the ALPHA 40 Logic Board in the trunk of the vehicle or in the passenger compartment. In some vehicles this will be dictated by available space; in others, it will be a matter of preference. Another choice that must be made in some cases is whether to re-use the existing Radio Cable by adding a "Pigtail" cable, or to use an entirely new Radio Cable supplied by Harris. This will be possible in some but not all cases, as indicated in Chart 1 of Chapter 3. When it is possible, the choice is a matter of preference. It will determine which Interface Kit is required for the installation.

1.02 The procedures given here assume that the original Control Unit has been removed and replaced by an ALPHA 40 Series Control Unit. The installation of the ALPHA 40 Series Control Unit should be accomplished in accordance with the instructions given in Publication PM-1565 (Revision E or later), supplied with the ALPHA 40 Control Unit.

1.03 Installations involving a Harris Transceiver require the use of an ALPHA 40 Logic Board, but not a Logic Interface Board, since the logic levels on the board are compatible with Harris Transceivers. Thus, no ribbon cable is required and the Radio Cable (or Radio Cable plus "Pigtail" Cable) is connected directly to the Logic Board.

1.04 Figure 4-1 shows cabling and wiring of a typical Harris Transceiver installation.

2. LOGIC BOARD

2.01 Install the Logic Board package in either the trunk or the passenger compartment, following the instructions given in Publication PM-1565 (Revision E or later) supplied with the ALPHA 40 Control Unit.

3. CABLING

3.01 Control Cable – If the Logic Board is installed in the trunk, use the 23-foot ALPHA 40 Control Cable 6624-5100, to connect the Cradle of the Control Unit to the Logic Board. Install the cable as described in Publication PM-1565 (Revision E or later). If the Logic Board is installed in the passenger compartment, use the six-foot Control Cable to make this connection and leave the existing cable in place.

3.02 Radio Cable – If the original Radio Cable is part number 992-0502 or 810-1021, it may be used as the Radio Cable in the new installation (trunk mount or front mount), with a "Pigtail" Cable added to adapt it to the ALPHA 40 Logic Board. Use "Pigtail" Cable 6624-3246. Engage the Elco connector on the Radio Cable. Engage the 40-pin connector of the "Pigtail" Cable with J2 on the Logic Board. The other end of the Radio Cable remains connected to the Transceiver, as in the original installation. If the original Radio Cable is other than part number 992-0502 or 810-1021, use new Radio Cable 6624-5200 for trunk mount Logic Board installations (no "Pigtail" required) or for Logic Board installation in the passenger compartment.

CAUTION

If a new Radio Cable is installed, be sure to connect the supplied fuseholder in the red wire within a few inches of the battery. Install a 15 amp fuse (supplied) in this fuseholder.

4. HARRIS TRANSCEIVER MODIFICATIONS

4.01 The crystal locations in Harris Transceivers must be matched to the ALPHA 40 Series Control Unit channel display. There are two methods of accomplishing this match. The preferred method, if sufficient oscillator boards are present in the Transceiver, is to reposition the

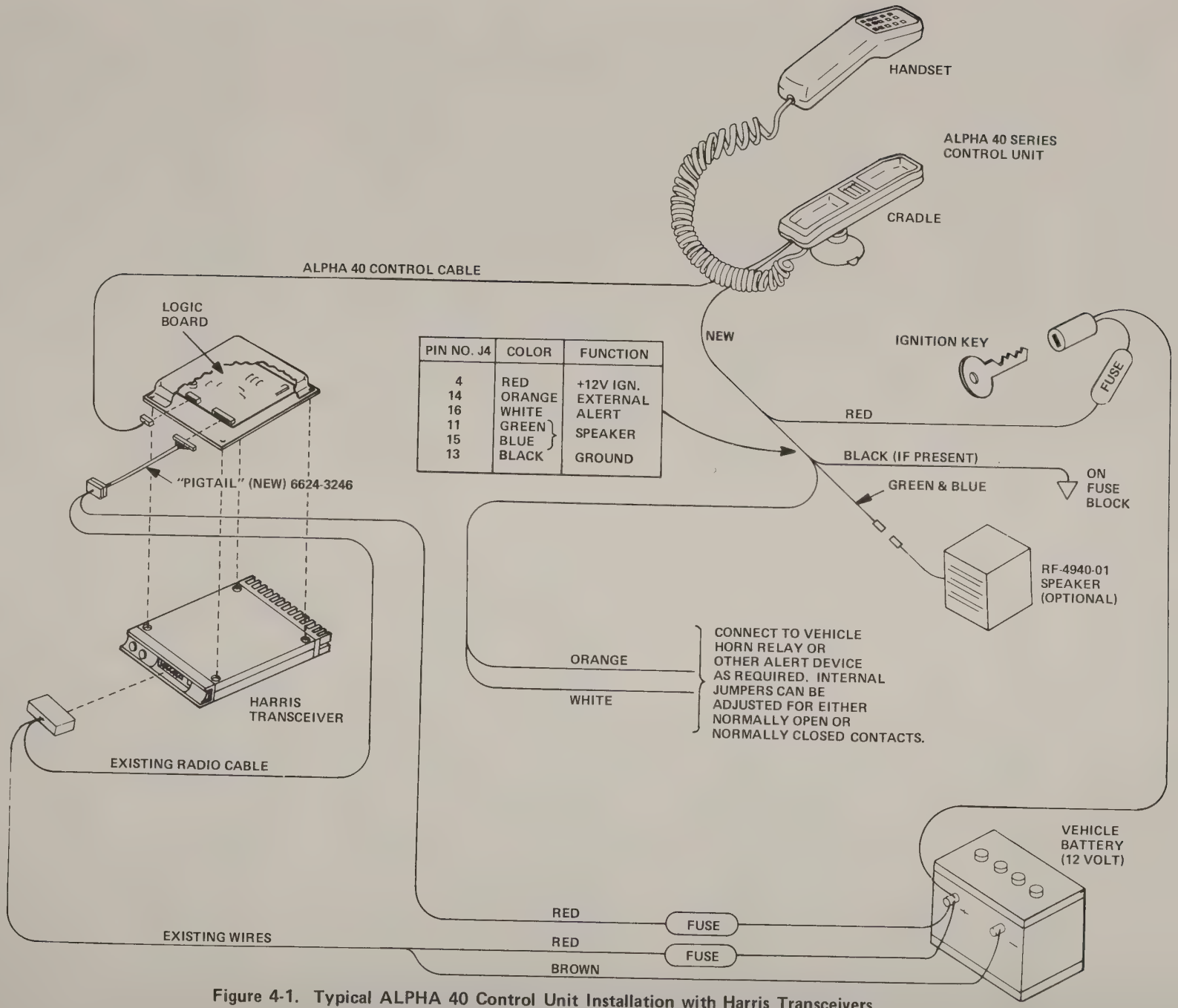


Figure 4-1. Typical ALPHA 40 Control Unit Installation with Harris Transceivers

crystals in the oscillator sockets. Refer to the Instruction Manual for the Transceiver for the crystal changing procedure. If not enough oscillators are present in the Transceiver, the jumpering of the channel selection wires in the Logic Board must be changed. The jumpers are located adjacent to IC3 and IC4 on the Logic Board (figure 4-2). Proceed as follows:

1. Remove jumpers JMP1 through JMP16 from the Logic Board.

2. Refer to Table C and solder jumpers in place to match the Transceiver crystals to the channel display of the Control Unit. As an example, in figure 4-2, jumpers which are installed in a Transceiver setup for RCC UHF operation would permit crystals for RCC UHF channels 21, 23, and 30 to be installed in channel crystal positions 1, 2, and 3. These same jumpers would, in a Transceiver setup for VHF Telco operation, allow crystals for VHF Telco channels 3, 7, and 21 to be installed in radio channel crystal positions 1, 2, and 3.

TABLE C

MATCHING RADIO CHANNELS TO CONTROL UNIT DISPLAY

Radio Channel (Crystal Position)	Jumpers	Channels Displayed by Control Unit				
		Telco Channels			RCC Channels	
		VHF	Canadian VHF	UHF	VHF	UHF
1		3	1	31	1	21
2		5	3	32	3	22
3		7	5	33	5	23
4		9	7	34	7	24
5		11	9	35	9	25
6		13	11	36	11	26
7		15	13	37	13	27
8		17	15	38		28
9		19	17	39		29
10		21	19	40		30
11		23	21	41		31
12			23	42		32
13			25			33
14						34
15						
16						

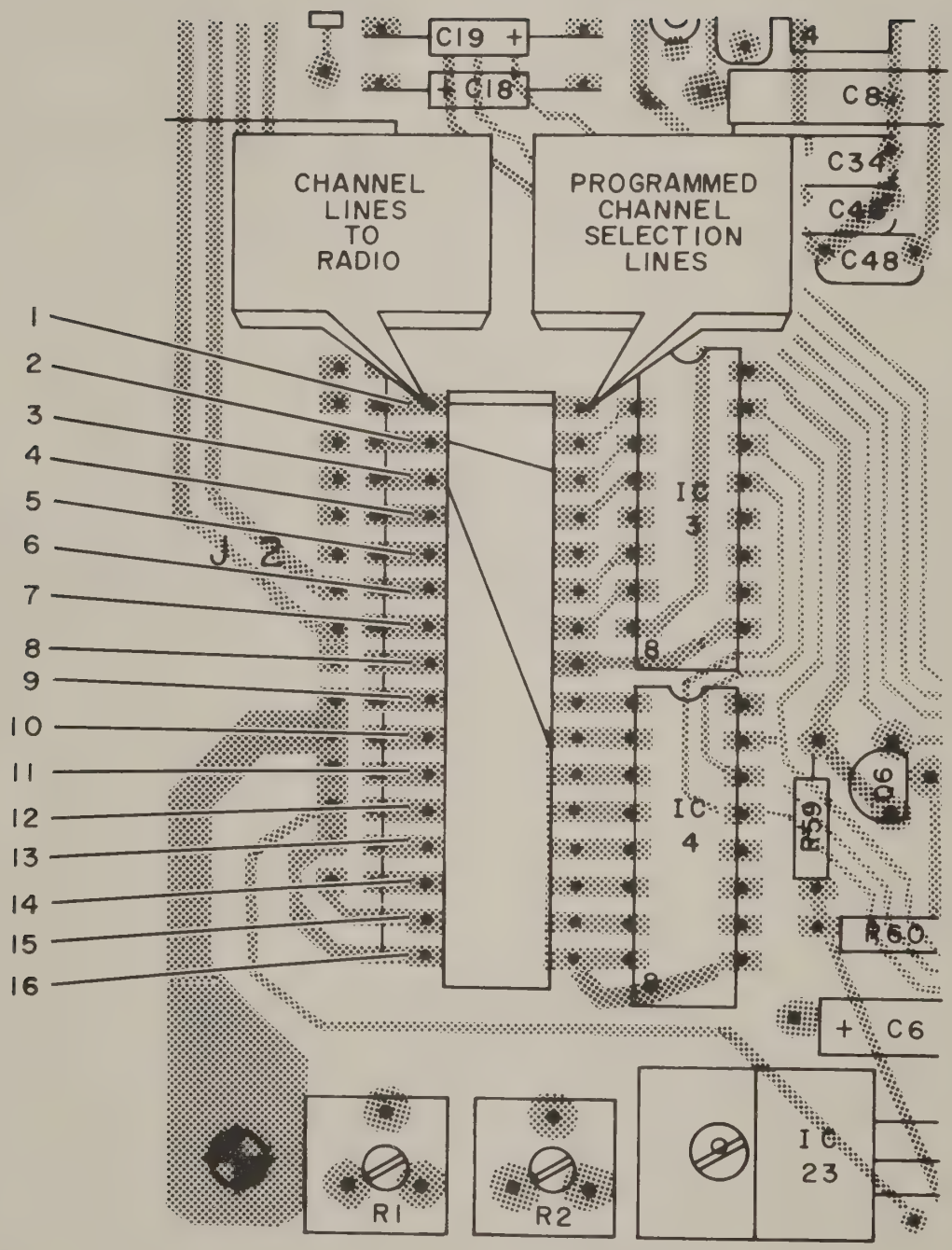


Figure 4-2. Portion of Logic Assembly, 6624-3120, Showing Example of Jumpering of Channel Selection Lines to the Radio Channel Lines

CHAPTER 5

INSTALLATIONS WITH GENERAL ELECTRIC TRANSCEIVERS

CONTENTS PAGE

FIGURES PAGE

1. GENERAL INFORMATION

1.01 Before beginning the installation, it must be decided whether to locate the ALPHA 40 Logic Board package (with an Interface Logic Board added to interface with the General Electric Transceiver Logic Levels) in the trunk or in the passenger compartment of the vehicle. In some vehicles, this choice will be dictated by available space; in others, it will be a matter of preference. The choice will determine if a 23-foot or a six-foot Control Cable will be used in the modified installation. Another choice that must be made in some cases is whether to re-use the existing Radio Control Cable Unit by adding a "Pigtail" Cable supplied in the kit, or to use an entirely new Radio Cable supplied by Harris. This choice will be necessary in some but not all cases, as shown in Chart 2 of Chapter 3. The choice is a matter of preference, (cost, condition of old cable, etc.) and will determine which Interface Kit will be used.

1.02 Figure 5-1 shows the cabling and wiring of a typical General Electric modification.

2. LOGIC INTERFACE BOARD

2.01 Skip this section for installations using the MASTR® line-per-channel radio because they do not require the Logic Interface Board. For other General Electric radios, proceed with paragraph 2.02.

2.02 Install the Logic Interface Board (supplied with the kit) in the Logic Board package as follows:

1. Remove the Logic Board package cover by removing seven screws that secure the cover to the base.

2. Secure the Logic Interface Board to the Logic Board using the three captive screws on the Logic Interface Board.

3. Connect one end of ribbon cable W2 to J2 on the Logic Board.

4. Pass the other end of the ribbon cable under the Logic Interface Board and connect it to J02 on the Logic Interface Board.

5. Install the Logic Board package cover using the seven screws.

6. If a "Pigtail" Cable is being used, (part number 6624-3245 for General Electric MJ Transceivers; part number 6624-3246 for General Electric MASTR® Exec II Transceiver), engage the 40-pin connector with J01 on the Logic Interface Board. If a new Radio Cable is being used, connect it to J01.

3. LOGIC BOARD

3.01 The Logic Board package may be installed in the trunk or in the passenger compartment, as dictated by available space or preference. If the Logic Board is to be installed in the trunk, pull the existing Radio Cable back into the trunk. This cable can be used in the ALPHA 40 installation as a Radio Cable or replaced as described in the next paragraph. The new ALPHA 40 Control Cable must be installed between the passenger compartment and the trunk for the trunk mount installation. If a passenger compartment installation is preferred, leave the existing Radio Cable in place. A shorter (six foot) ALPHA 40 Control Cable is available upon request for the connection between the Control Unit Cradle and the Logic Board for passenger compartment installations.

3.02 If a "Pigtail" Cable (6624-3246) is being used to convert the existing General Electric cable to a Radio Cable, engage the Elco connector on the "Pigtail" with the Elco connector on the General Electric Cable. Engage the 40-pin connector on the "Pigtail" with connector J01 of the Logic Interface Board; if a MASTR® line-per-channel radio is being used, then (since this installation does not use the Logic Interface Board) make this connection to J2 of the Logic Board. Route the ALPHA 40 Control Cable (standard 23-foot cable for trunk mount installations or six-foot for passenger compartment installations available upon request) from the Cradle assembly to the Logic Board and engage the 14-pin connector on the cable with J3 on the Logic

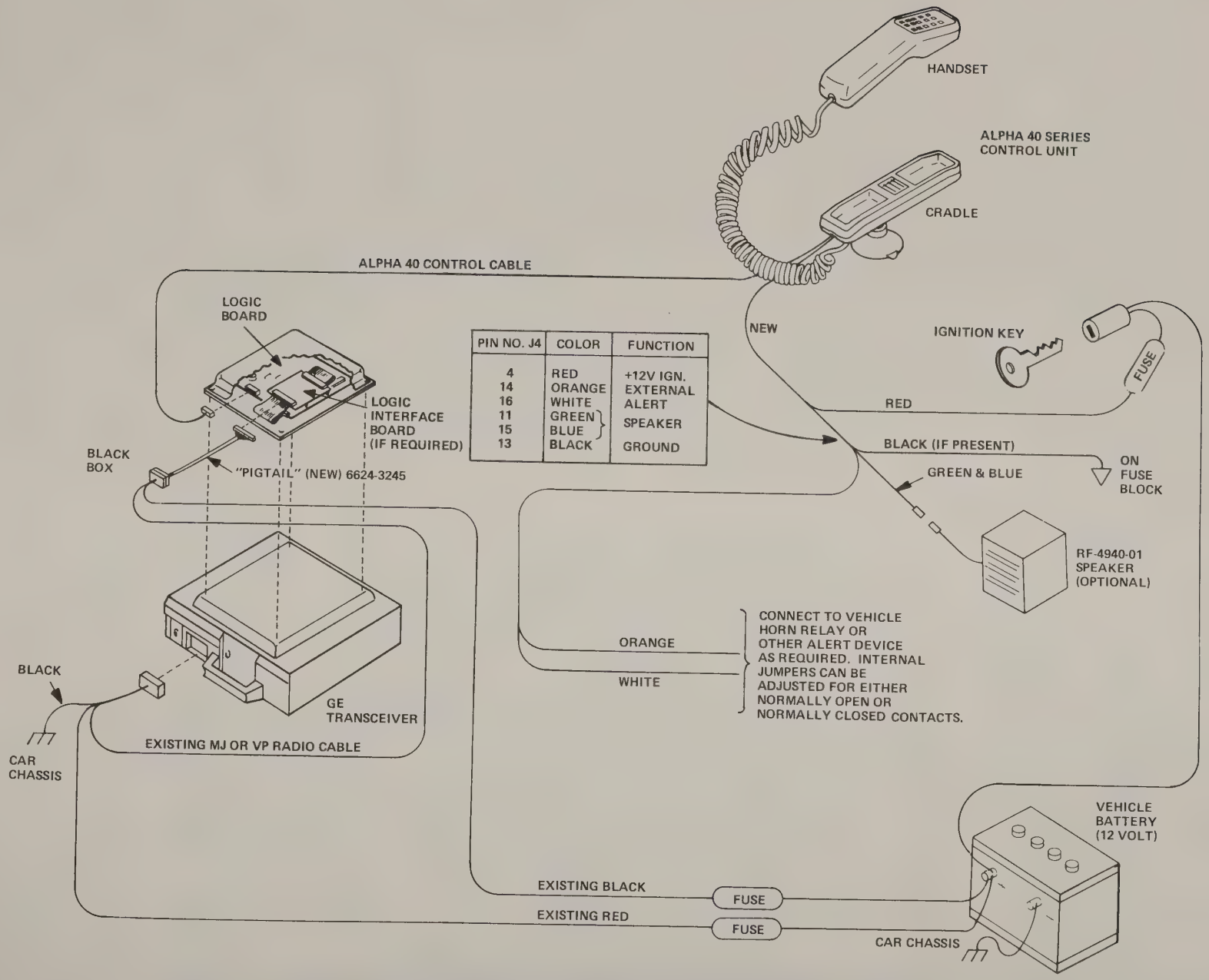


Figure 5-1. Typical ALPHA 40 Control Unit Installation with General Electric Transceivers

Board. Connect the Control Cable to the Cradle of the Control Unit as described in Publication PM-1565 (Revision E or later).

3.03 Mount the Logic Board on the Transceiver for trunk mount installations, or in the passenger compartment for front mount installations, as described in PM-1565 (Revision E or later).

4. RADIO CABLE

4.01 Connect the Radio Cable to the Transceiver. If a new Radio Cable is used (6624-5221) connect it between the Logic Interface Board and the Transceiver, or between the Logic Board and the Transceiver for installations using the MASTR® line-per-channel radio.

4.02 With installations involving the MASTR® line-per-channel radio, the following modification must be made. At the Logic Board side of the 6624-5221 cable, wires connected to pins 16, 17, and 19 must be removed if present. This may be done by either cutting the wires off at the connector or by pulling the pins out of the connector. To pull the pins out of the connector use a pointed object to depress the tab (which shows through a hole on the side of the connector) corresponding to the proper pin. Make sure the loose wire ends are covered properly so that a short does not occur.

CAUTION

If a new Radio Cable is installed, be sure to connect the supplied fuseholder in the red wire within a few inches of the battery. Install a 15 amp fuse (supplied) in this fuseholder.

5. TRANSCEIVER MODIFICATIONS

5.01 For General Electric MJ Type Transceivers, the Selector Board must be removed. Refer to the Transceiver Instruction Manual for removal procedure.

5.02 The MASTR® Exec II Transceiver requires no Transceiver modifications.

5.03 If the Transceiver is a UHF model for RCC service, it will be desirable to move the channel elements in order to make the ALPHA 40 display correspond to the selected channels. To do this, refer to the General Electric Instruction Manual and move the channel elements to correspond to the Transceiver channels as shown below:

Channel Element Position:	1 2 3 4 5 6 7 8 9 10 11 12
RCC UHF Channel:	21 22 23 24 25 26 27 28 29 30 31 32

If RCC channels 33 and/or 34 are to be used, place the corresponding channel element(s) in unused position(s). Remove the wire(s) from the unused oscillator(s) at the 40-pin connector that mates with J01 on the Logic Interface Board. Route the wire(s) to pin 39 for channel 33 and/or pin 40 for channel 34. Also, on the cable, remove the channel 1 control wire from pin 27 in the 40-pin connector J01 and move it to pin 40.

5.04 If the receive audio is low, adjust the earpiece volume control (screw driver adjustment) on the cradle.

CHAPTER 6
INSTALLATIONS WITH MOTOROLA TRANSCEIVERS

CONTENTS PAGE

FIGURES PAGE

1. GENERAL INFORMATION

1.01 Before beginning the installation, it must be decided whether to locate the ALPHA 40 Logic Board package (with an Interface Logic Board added to interface with the Motorola Transceiver Logic Levels) in the trunk or in the passenger compartment of the vehicle. In some vehicles, this choice will be dictated by available space; in others, it will be matter of preference. The choice will determine if a 23-foot or a six-foot Radio Cable will be used in the modified installation. Another choice that must be made in some cases is whether to re-use the existing Radio Cable by adding a "Pigtail" Cable supplied in the kit, or to use an entirely new Radio Cable supplied by Harris. This choice will be necessary in some but not all cases, as shown in Chart 3 of Chapter 3. The choice is a matter of preference, (condition of old cable, etc.) and will determine which Interface Kit will be used.

1.02 Figure 6-1 shows the cabling and wiring of a typical Motorola modification.

2. LOGIC INTERFACE BOARD

2.01 Install the Logic Interface Board (supplied with the kit) in the Logic Board package as follows:

1. Remove the Logic Board package cover by removing seven screws that secure the cover to the base.

2. Secure the Logic Interface Board to the Logic Board using the three captive screws on the Logic Interface Board.

3. Connect one end of ribbon cable W2 to J2 on the Logic Board.

4. Pass the other end of the ribbon cable under the Logic Interface Board and connect it to J02 on the Logic Interface Board.

5. Install the Logic Board package cover on the package using the seven screws.

6. If a "Pigtail" Cable is being used, (6624-3245 for all Motorola Transceivers), engage the 40-pin connector with J01 on the Logic Interface Board. If a new Radio Cable is being used, connect it to J01.

3. LOGIC BOARD AND RADIO CONTROL CABLE

3.01 The Logic Board package may be installed in the trunk or in the passenger compartment, as dictated by available space or preference. Install the Logic Board package and the ALPHA 40 Control Cable as described in PM-1565 (Revision E or later). For a passenger compartment installation, a six-foot Control Cable is available; for a trunk installation, use the standard 23-foot Control Cable. If the Logic Board is to be installed in the trunk, pull the existing Radio Control Cable back into the trunk. If the cable is an MJ type, TKN-6142C, it can be used with "Pigtail" Cable 6624-3245 as the Radio Cable to interconnect the Transceiver and the Logic Interface Board in the new installation. If the cable is other than an MJ type, it may be discarded and a Harris 6624-5211 Radio Cable, supplied with the kit, will be used for this interconnection. If the Logic Board is to be installed in the passenger compartment, and the existing cable is an MJ type, leave it in place for use as the Radio Cable (as modified by the addition of the "Pigtail" Cable) in the new installation.

3.02 Route the ALPHA 40 Control Cable from the Cradle assembly to the Logic Board package and connect the 14-pin connector into J3 on the Logic Board. Mount the Logic Board package as described in the Instruction Manual for the ALPHA 40 Series Control Unit.

3.03 Check that fuse F1 on the Logic Board is rated at 5 amperes; if not, replace with a 5 ampere fuse.

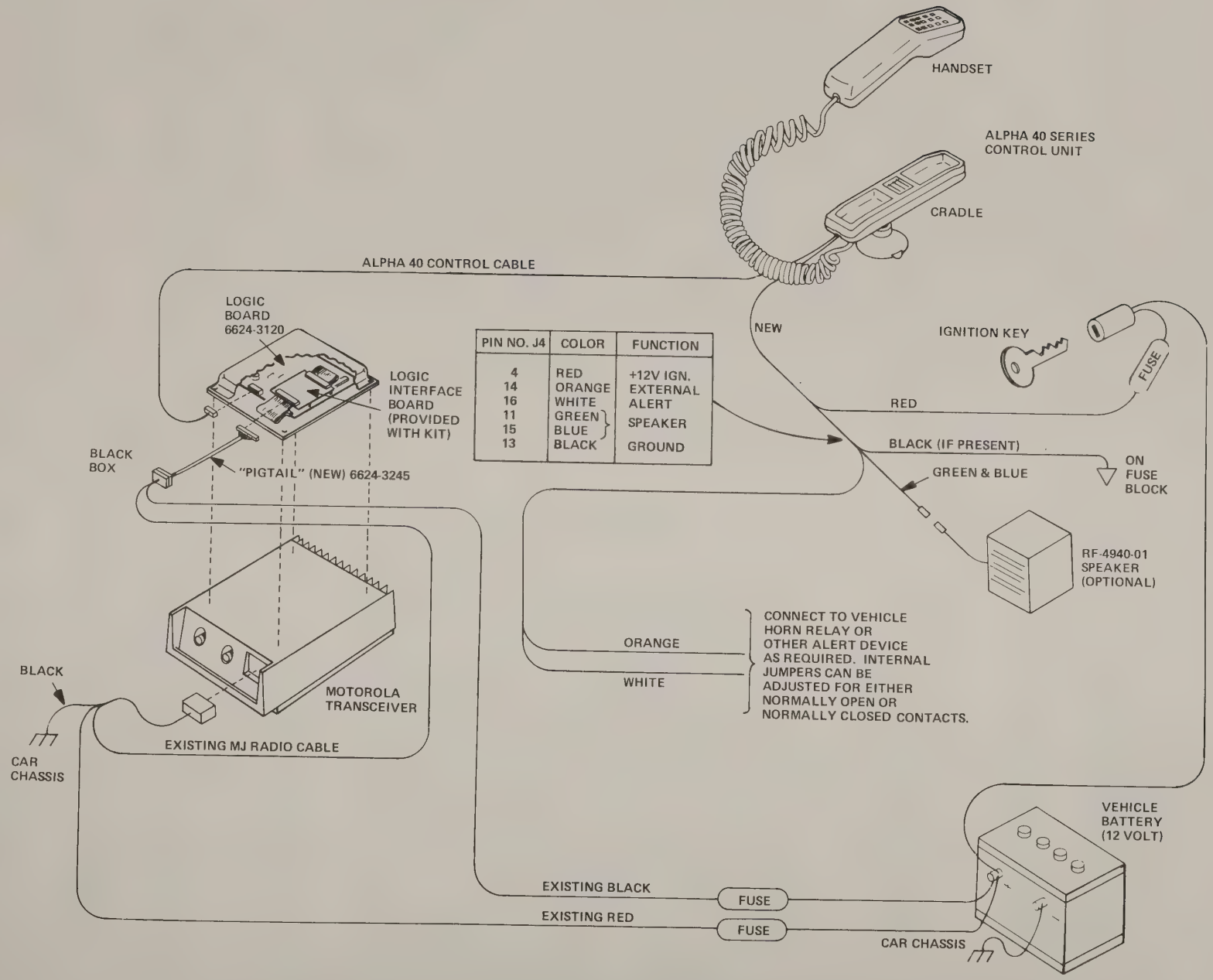


Figure 6-1. Typical ALPHA 40 Control Unit Installation with Motorola Transceivers

4. RADIO CABLE

4.01 Connect the Radio Cable to the Transceiver. If a new Radio Cable is used (6624-5211), connect it between the Logic Interface Board and the Transceiver.

CAUTION

If a new Radio Cable is installed, be sure to connect the supplied fuseholder in the red wire within a few inches of the battery. Install a 15 amp fuse (supplied) in this fuseholder.

5. TRANSCEIVER MODIFICATIONS

5.01 Motorola TLD-1100 Radios (MJ Series)

5.02 Replace the Supervisory Logic Board in J402 of the Motorola MJ radio with an MK/KS jumper plug, 6624-3265 (see figure 8-7).

5.03 Motorola "OLD" VHF PULSAR® Radios

5.04 Replace the Supervisory Logic Board in Motorola VHF PULSAR® radios with Supervisory Bypass Board, 6624-3270. Remove jumper JU-101 on the interconnect board of the radio. Jumper across inductor L105 on the interconnect board. Remove options board from radio if present.

5.05 The "OLD" VHF PULSAR® radios may be equipped with either the PULSAR®/MJ interface card, the FACTS interface card, or PULSAR® 100 interface card. When using the FACTS card, CR6 through CR16 must be removed. Neither the PULSAR®/MJ, nor the PULSAR® 100 interface card needs modification. The MK interface card cannot be used with the ALPHA 40 Control Units, and must be replaced by the PULSAR®/MJ, the FACTS, or the PULSAR® 100 interface card, modified as noted previously.

5.06 Set the microphone input sensitivity jumper (located on the audio board in the PULSAR® radio) to the minimum position and proceed with adjustments as specified in Chapter 2, section 4 of PM-1565 (Revision E or later). For an ALPHA RF-4940, RF-4970 or RF-4980 Control Unit, if the receive audio is low, adjust the earpiece volume control (screw driver adjustment) on the Cradle.

5.07 Motorola "NEW" VHF/UHF PULSAR® Radio

5.08 Replace the Supervisory Logic Board with a Supervisory Bypass Board, 6624-3280. Remove options board if present. Remove jumper JU-101 on the interconnect board. Jumper across inductor L-105 on the intercomect board. PULSAR® radios may be equipped with the PULSAR® (12/14), PULSAR® 100, FACTS, or MJ interface card. If the FACTS interface card is used, remove CR6 through CR16 on that card. If the PULSAR® (12/14) interface is used, remove CR1 through CR12. For RCC VHF PULSAR® radios, remove CR1 through CR14 according to the channel strapping instructions in the appropriate Motorola instruction manuals. Note that a special jumper arrangement is necessary to operate on RCC channels 33 and 34 as explained in the Motorola manual.

5.09 Set the microphone input sensitivity jumper (located on the audio board in the PULSAR® radio) to the minimum position and proceed with adjustments as specified in Chapter 2, Section 4 of PM-1565 (Revision E or later). For an ALPHA 40 RF-4940, RF-4970 or RF-4980 Control Unit, if the receive audio is low, adjust the earpiece volume control (screw driver adjustment) on the Cradle.

5.10 RCC VHF PULSAR® (Mark VII) Radios

5.11 These radios may be mated to the ALPHA 40 Control Units using the same Supervisory Bypass Board, 6624-3270 and by removing jumper JU-101 and jumpering across L-105 on the interconnect board. The Pulsar Mark VII interface board must be used and CR1 through CR7 on that board must be removed.

5.12 Motorola UHF MK Series

5.13 The Supervisory Logic Package of the Motorola MK series radio must be replaced with an MK/KS jumper plug, 6624-3265. Connect jumper JU-1 on the audio board. Model TUE1060A of the MK series requires the following modifications: configure the channel strapping circuit board, P403 (Motorola TLN 8834A), so that a straight-through connection is provided for each channel line in connector J403 as shown in figure 6-2. Alternately, replace TLN8834A with a TLN8839A channel strapping board.

5.14 Note that the channel 12 line is not connected through on the channel strapping board and must be brought out to the radio connector. This is accomplished by removing R928 and CR916 from the channel element socket board in the radio. A jumper must then be installed from the GRN-WHT wire (formerly connected to R928) to the hole which was formerly the anode of CR916.

5.15 Set the microphone input sensitivity jumper (located on the audio board in the radio) to the minimum position, and proceed with adjustments as specified in Chapter 2, Section 4 of PM-1565 (Revision E or later).

5.16 The radio channel modifications are already incorporated in Motorola models TUE1353AB, TUE1140AB, and T1434A.

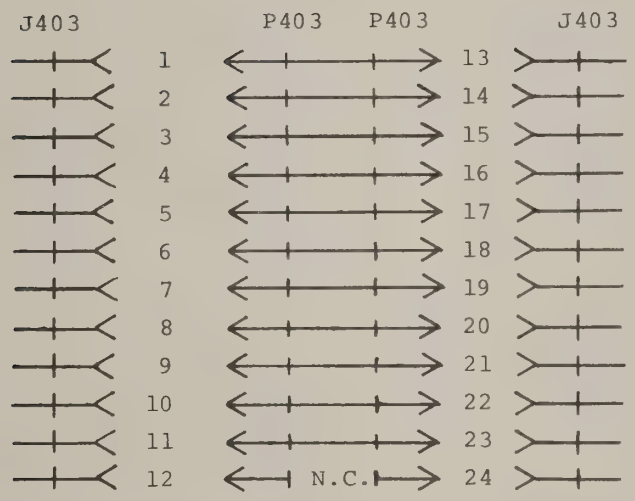


Figure 6-2. Motorola TLN8834A Channel Strapping

CHAPTER 7
THEORY OF OPERATION

CONTENTS PAGE

1. THEORY OF OPERATION FOR LOGIC INTERFACE BOARDS 6624-3261, 6624-3262, AND 6624-3263

1.01 The ALPHA 40 Series Logic Interface Board, (3 x 4-1/4 inch overall) mounts on the Logic Board and provides for compatible signal voltages and interconnection of the required leads between the logic unit and a non-Harris VHF or UHF Transceiver. For radios having line per channel selection, the Logic Interface Board decodes the BCD output of the logic unit, selecting any one of up to 16 channel lines. On radios using binary channel selection, the BCD output of the logic unit is extended to the radio with appropriate buffering.

1.02 A channel request is generated by the Logic Board. A binary number is then forwarded to the Logic Interface Board via input leads A, B, C, and D. That signal enters the Logic Interface Board through pins 3, 4, 5, and 6 of J02 and is buffered by HEX buffer IC3, and applied to IC1 and IC2. IC1 and IC2 are eight (8) channel decoders that are alternately enabled by the D lead in such a manner that IC1 is enabled when the D lead is low and IC2 is enabled when the D lead is high.

1.03 Thus, for example, if channel number 10, binary 9 (1001) is applied to the Logic Interface Board on leads D, C, B, and A, respectively, the D lead is high, and IC2 is enabled, while C, B, and A, 001 (decimal number 1), are causing IC2 pin 14 to conduct to channel common, selecting channel 10. If the D lead were low, pin 14 of IC1 would conduct to channel common, selecting channel 2.

1.04 In cases where the Logic Interface Board is used with radios employing binary channel selection, IC1 and IC2 are not installed on the Logic Interface Board, and R1, R2, R3, R4, R5 and R7 must be removed. Jumpers JP5 through JP8 are then required, forwarding the binary output of the Logic Board directly to the radio through the open drain buffer, IC3.

2. THEORY OF OPERATION FOR LOGIC INTERFACE BOARD 6624-3220

2.01 The ALPHA 40 Series Logic Interface Board 6624-3220 (3 x 4-1/4 inch overall) is a version of the Logic Interface Board that has been provided with certain existing installations. This board mounts on the Logic Board and provides for compatible signal voltages and interconnection of the required leads between the logic unit and a non-Harris VHF Transceiver.

2.02 A channel request is generated by the Logic Board. A binary number is forwarded to the Logic Interface Board input via A, B, C, and D. The signal enters the Logic Interface Board input via pins 3, 4, 5, and 6 of J02, and is level shifted to +12 volts via Q1 through Q4. The level shift introduces an inversion which is again inverted by the hex inverter, IC3. The lines are applied to IC1 and IC2, which are eight (8) channel decoders. IC1 and IC2 are alternately enabled by the D lead in such a manner that IC1 is enabled when the D lead is low, and IC2 is enabled when the D lead is high.

2.03 Thus, for example, if channel number 10, binary 9 (1001) is applied to the Logic Interface Board on leads D, C, B, and A, 001 (decimal number 1), are causing IC2 pin 14 to conduct to channel common, selecting channel 10. If the D lead were low, pin 14 of IC1 would conduct to channel common, selecting channel 2.

CHAPTER 8

SCHEMATIC DIAGRAMS AND PARTS LISTS

CONTENTS

FIGURES

1. GENERAL INFORMATION

1.01 This section contains schematic diagrams, parts lists, and component location drawings for Logic Interface Boards. Pigtail Cables, Radio Cables, and other items included in Harris Interface Options Kits. Included are several Logic Interface Boards that have been provided in the past in some interface kits.

1.02 Figure 8-1 contains Logic Interface Board assembly detail for 6624-3269 Revision C. A schematic of this Logic Interface Board assembly is presented in figure 8-2. Table D contains the parts list for this assembly. These diagrams and lists apply to Logic Interface Boards 6624-3261, 6624-3262, and 6624-3263, as explained in the individual diagram or table.

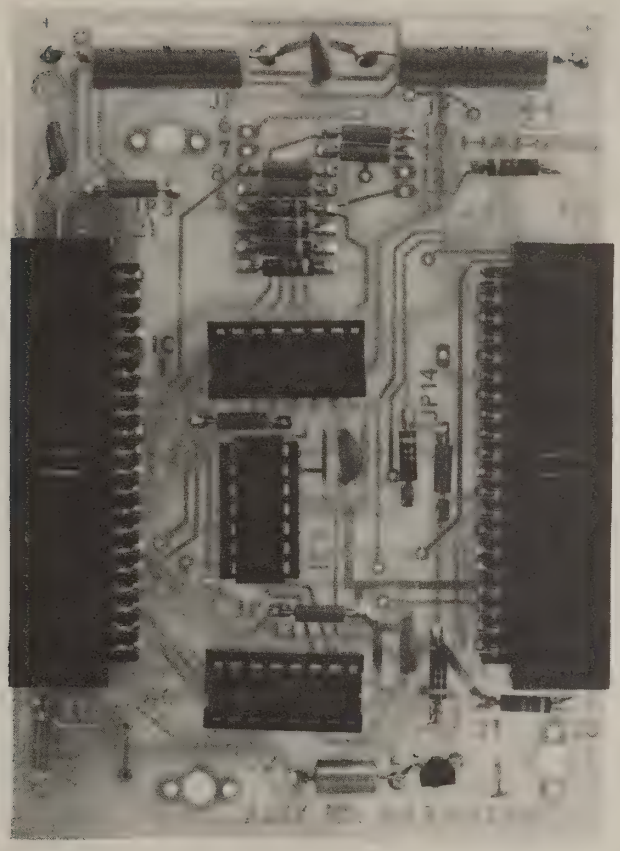
1.03 Figure 8-3 contains Logic Interface Board assembly detail for 6624-3269 Revision A or B. A schematic diagram of this Logic Interface Board is presented in figure 8-4. Table D contains the parts list for this assembly. This is an earlier version of the Logic Interface Board now superseded by 6624-3269 Revision C, but present in certain existing installations.

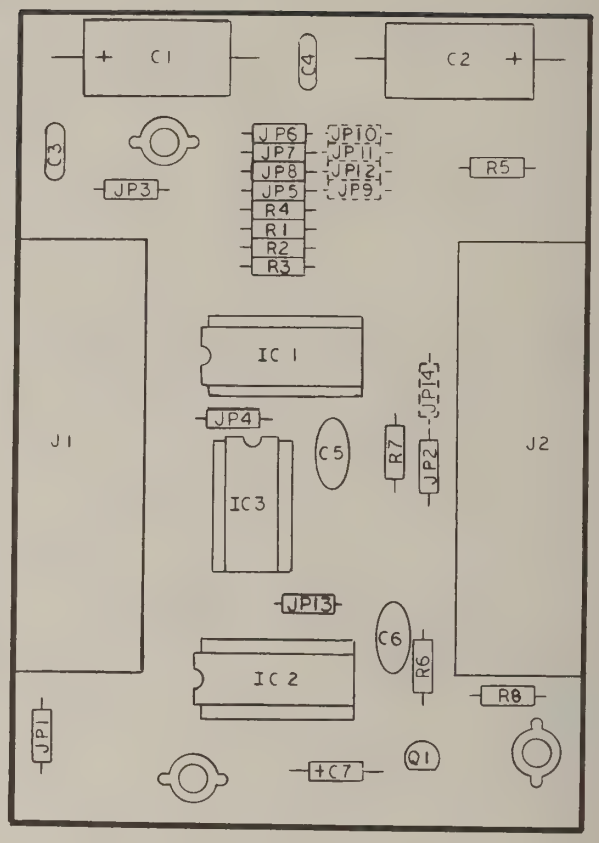
1.04 Figure 8-5 contains Logic Interface Board assembly detail for the 6624-3220 Interface Board. A schematic diagram of this Logic Interface Board is presented in figure 8-6. Table E contains the parts list for this assembly. This is an earlier version of the Logic Interface Board now superseded by 6624-3269 Revision C, but present in certain existing installations.

1.05 Figure 8-7 shows the assembly and schematic drawings for MK/KS jumper plug 6624-3265. Figure 8-8 shows assembly and schematic drawings for Motorola VHF Pulsar® Supervisory Bypass Board 6624-3270. Figure 8-9 shows assembly and schematic drawings for Motorola UHF Pulsar® and new VHF Pulsar® Supervisory Bypass Board 6624-3280.

1.06 Figures 8-10 and 8-11 are schematics of "Pigtail" Cables used to adapt existing Radio Cables to the Logic Interface Boards provided in the options kits.

1.07 Figures 8-12 through 8-14 are schematics of Full Radio Cables that can be used to interconnect existing Transceivers to the ALPHA 40 Logic package as an alternative to the use of existing cables and "Pigtail" cables.

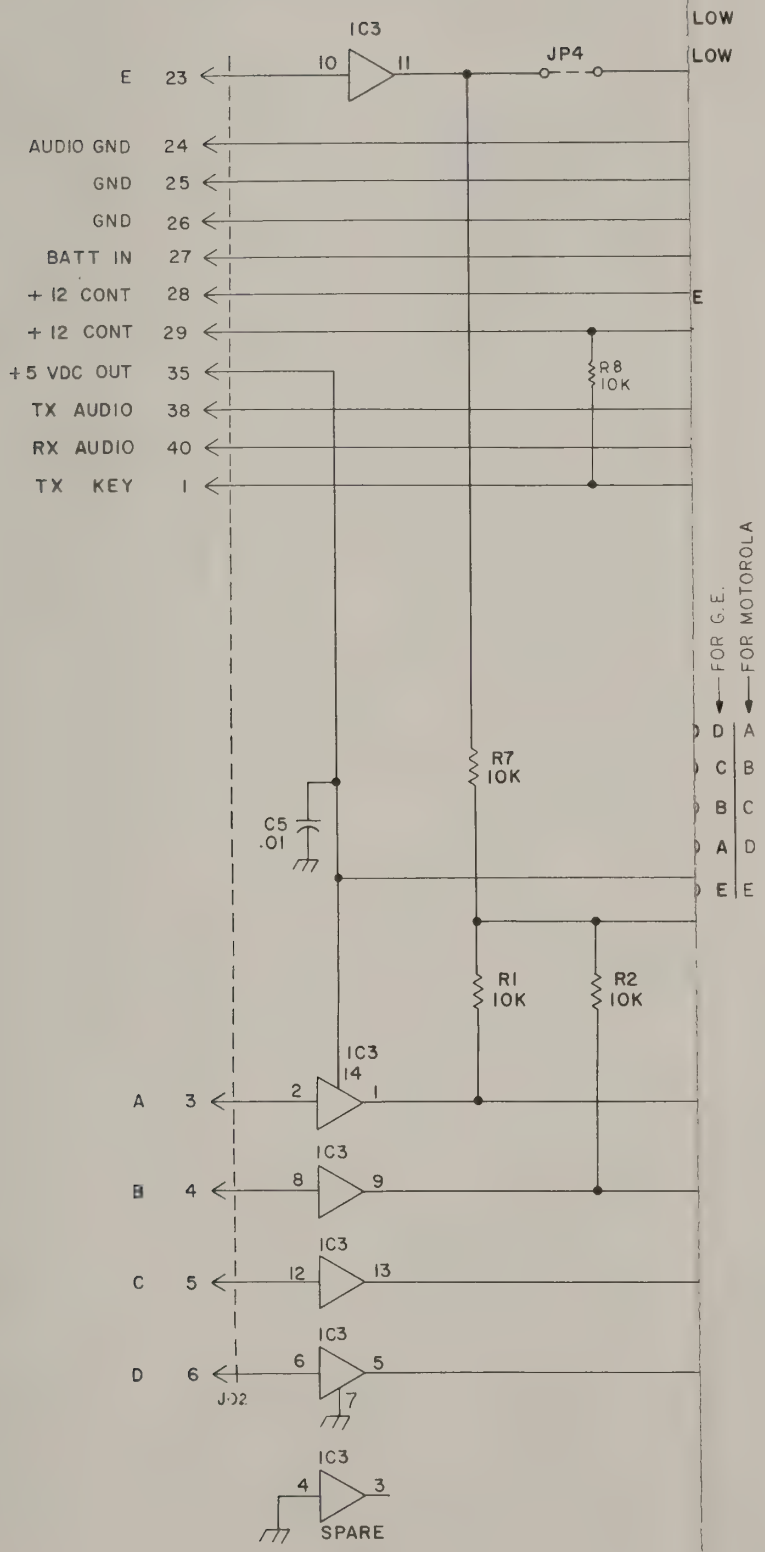




NOTE

THE LOGIC INTERFACE BOARD, P/N 6624-3269 REVISION C, IS BUILT UNDER THREE ASSEMBLY CONFIGURATIONS: 6624-3261, 6624-3262, AND 6624-3263. ALL PARTS ARE SHOWN INSTALLED FOR PLACEMENT REFERENCE ONLY. SEE TABLE 8-1 FOR COMPLETE PARTS LISTING AND ASSEMBLY DIFFERENCES. CHART A, B, AND C WILL PROVIDE INFORMATION CONCERNING USE.

Figure 8-1. Logic Interface Board, 6624-3269 Revision C



INSTALL JUMPERS AND IC'S AS FOLLOWS:
X-DESIGNATES PART IN

ASSY	6624-3261	6624-3262	6624-3263
JP1			
JP2	X		
JP3			
JP4		X	
JP5			X
JP6			X
JP7			X
JP8			X
JP9		X	
JP10		X	
JP11		X	
JP12		X	
JP13		X	
JP14		X	
R1	X	X	
R2	X	X	
R3	X	X	
R4	X	X	
R5	X		
R6	X		
R7	X	X	
R8	X	X	X
IC1	X		
IC2	X		
Q1	X		

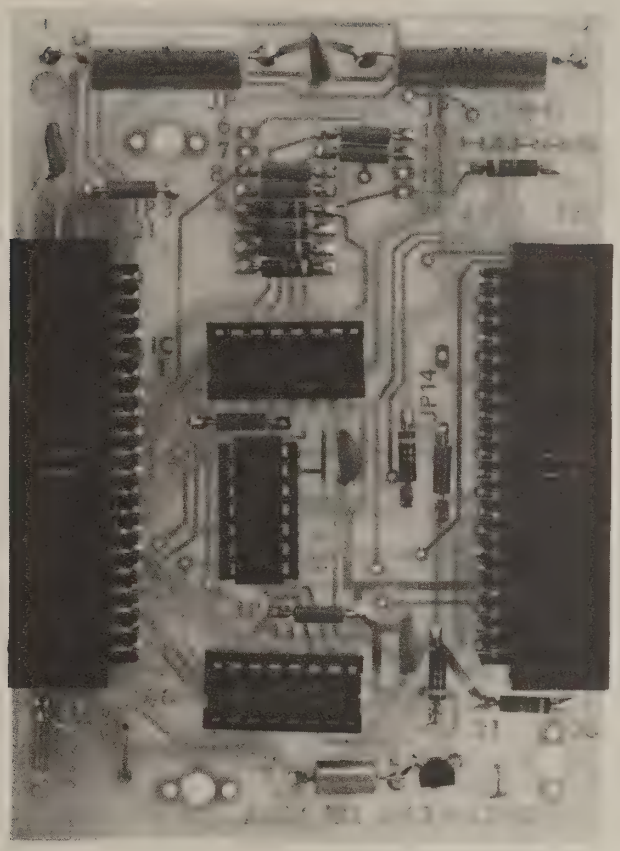
UNLESS OTHERWISE SPECIFIED:

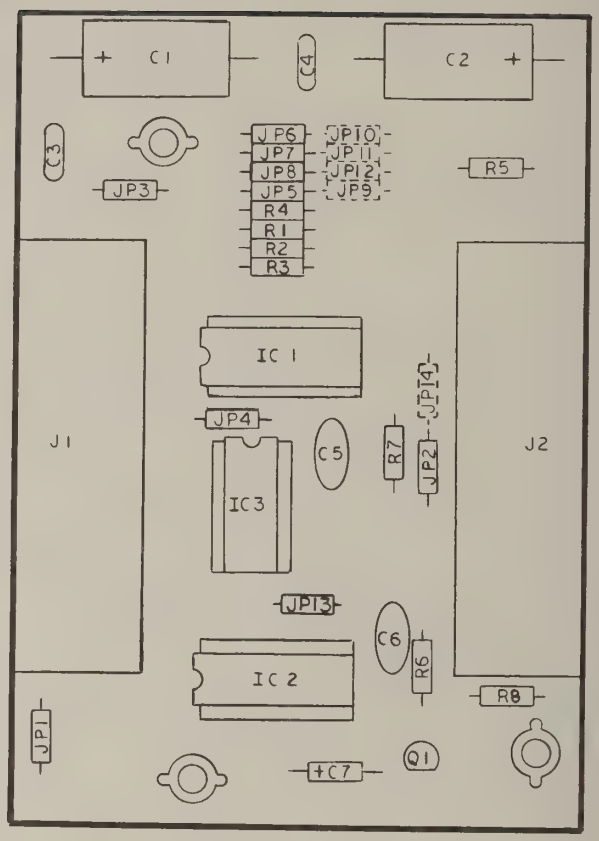
ALL CAPACITOR VALUES ARE IN MICROFARADS.

ALL RESISTOR VALUES ARE IN OHMS.

IN 6624-3263 ASSEMBLY REMOVE RESISTORS: R1, R2, R3, R4, R5, R7

Figure 8-2. Logic Interface Board, 6624-3269 Revision C, Schematic Diagram (covers Logic Interface Board Assemblies 6624-3261, 6624-3262, and 6624-3263).

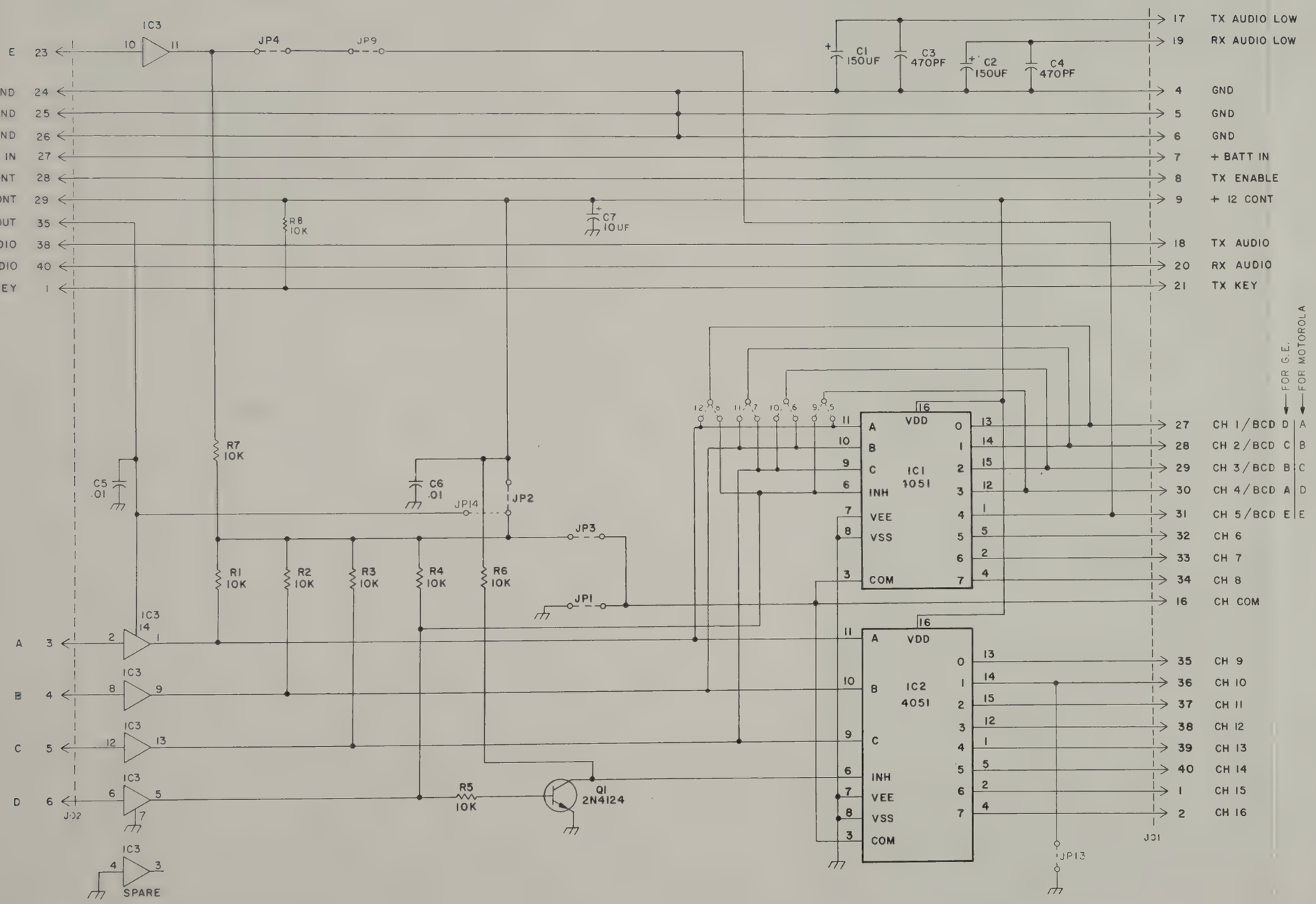




NOTE

THE LOGIC INTERFACE BOARD, P/N 6624-3269 REVISION C, IS BUILT UNDER THREE ASSEMBLY CONFIGURATIONS: 6624-3261, 6624-3262, AND 6624-3263. ALL PARTS ARE SHOWN INSTALLED FOR PLACEMENT REFERENCE ONLY. SEE TABLE 8-1 FOR COMPLETE PARTS LISTING AND ASSEMBLY DIFFERENCES. CHART A, B, AND C WILL PROVIDE INFORMATION CONCERNING USE.

Figure 8-1. Logic Interface Board, 6624-3269 Revision C



INSTALL JUMPERS AND IC'S AS FOLLOWS:
X-DESIGNATES PART IN

ASS'Y	6624-3261	6624-3262	6624-3263
JP1			
JP2	X		
JP3			
JP4		X	
JP5			X
JP6			X
JP7			X
JP8			X
JP9		X	
JP10		X	
JP11		X	
JP12		X	
JP13		X	
JP14		X	
R1	X	X	
R2	X	X	
R3	X	X	
R4	X	X	
R5	X		
R6	X		
R7	X	X	
R8	X	X	X
IC1	X		
IC2	X		
Q1	X		

UNLESS OTHERWISE SPECIFIED:

ALL CAPACITOR VALUES ARE IN MICROFARADS.
ALL RESISTOR VALUES ARE IN OHMS.

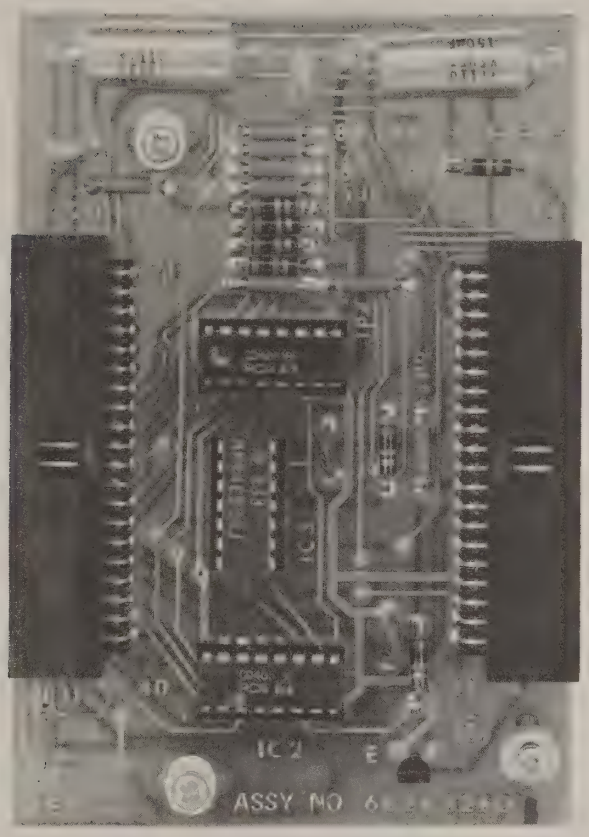
IN 6624-3263 ASSEMBLY REMOVE RESISTORS:
R1, R2, R3, R4, R5, R7

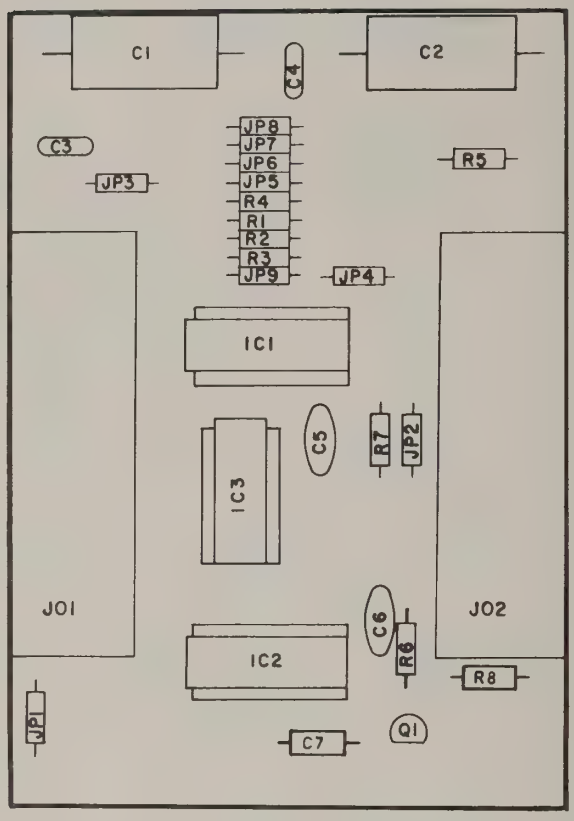
Figure 8-2. Logic Interface Board, 6624-3269 Revision C, Schematic Diagram (covers Logic Interface Board Assemblies 6624-3261, 6624-3262, and 6624-3263).

TABLE D

LOGIC INTERFACE BOARD, 6624-3269, REVISION C; ASSEMBLY CONFIGURATION, 6624-3261, 6624-3262, AND 6624-3263, PARTS LIST

Reference Designator	Name & Description	RF Part Number
	Common Parts	
C1, C2	Capacitor, Tantalum, 150 uF	C-5949
C3, C4	Capacitor, Ceramic, 470 pF	C-3508
C5, C6	Capacitor, Ceramic, Disc, 0.01 uF	C-4952
C7	Capacitor, Tantalum, 10 uF	C-6738
IC3	Integrated Circuit, MM74C906	I02-0006-000
R8	Resistor, 10K, 5%, 1/4W	R-1273
J01/J02	Connector, 40 Pin	J-0436
	Assembly 6624-3261	
R1-R7	Resistor, 10K, 5%, 1/4W	R-1273
IC1, IC2	Integrated Circuit, CD4051BE	IC-0376
Q1	Transistor, 2N4124	Q-0385
JP2	Jumper	MP-1142
	Assembly 6624-3262	
R1-R4	Resistor, 10K, 5%, 1/4W	R-1273
R7	Resistor, 10K, 5%, 1/4W	R-1273
JP4	Jumper	MP-1142
JP9-JP14	Jumper	MP-1142
	Assembly 6624-3263	
JP5-JP8	Jumper	MP-1142

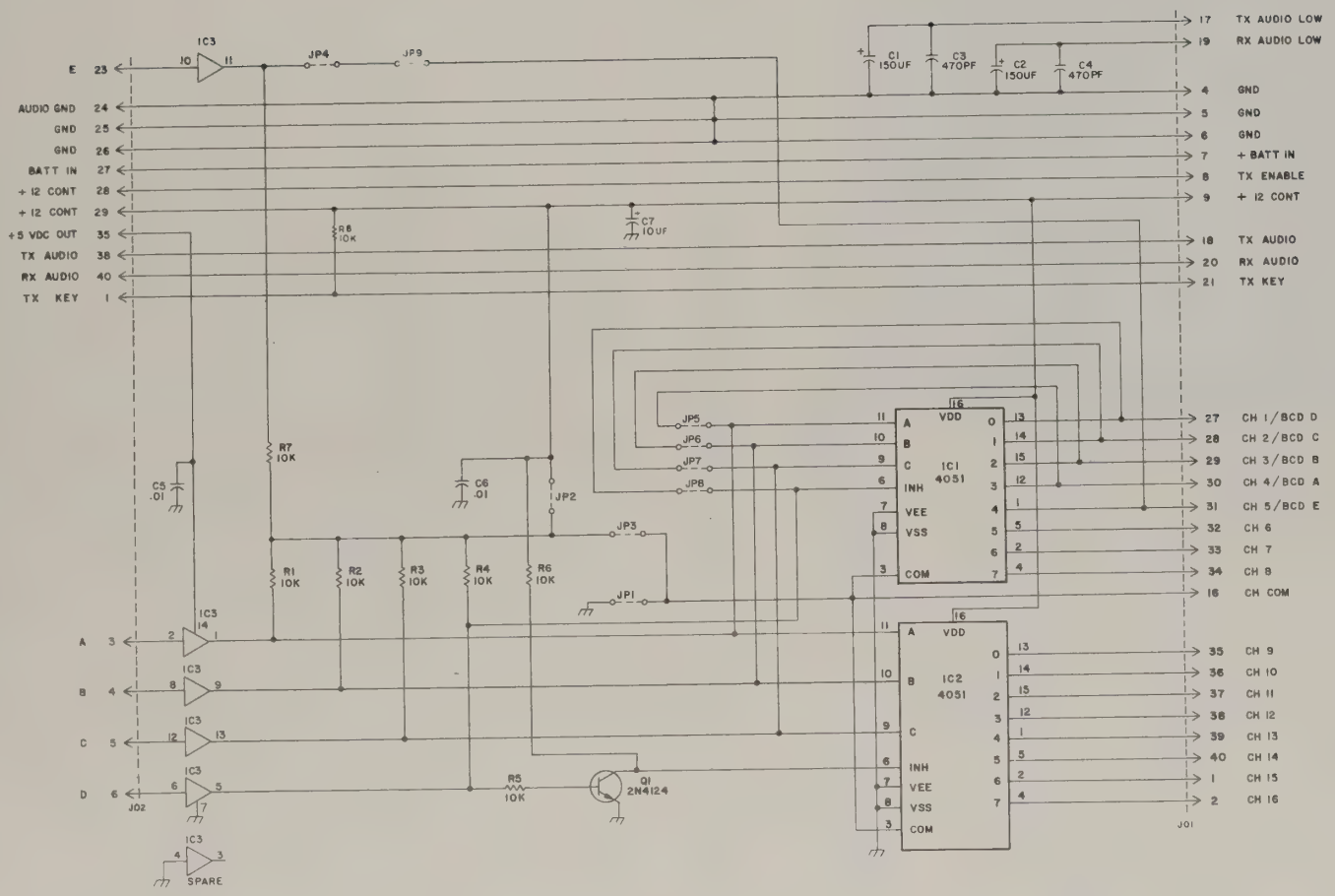




NOTE

LOGIC INTERFACE BOARD, P/N 6624-3269 REVISION A OR B, IS BUILT UNDER TWO ASSEMBLY CONFIGURATIONS: 6624-3261 AND 6624-3263. ALL PARTS ARE SHOWN INSTALLED FOR PLACEMENT REFERENCE ONLY. SEE TABLE 8-2 FOR COMPLETE PARTS LISTING AND ASSEMBLY DIFFERENCES. TABLE 3-1 WILL PROVIDE INFORMATION CONCERNING WHICH KITS THE INDIVIDUAL ASSEMBLIES ARE FOUND IN.

Figure 8-3. Logic Interface Board, 6624-3269, Revision A or B



	6624-3261	6624-3263
JP1		
JP2	X	
JP3		
JP4		
JP5		X
JP6		X
JP7		X
JP8		X
IC1, IC2	X	
JP9	X	X

NOTE

X DESIGNATES PARTS ARE IN.

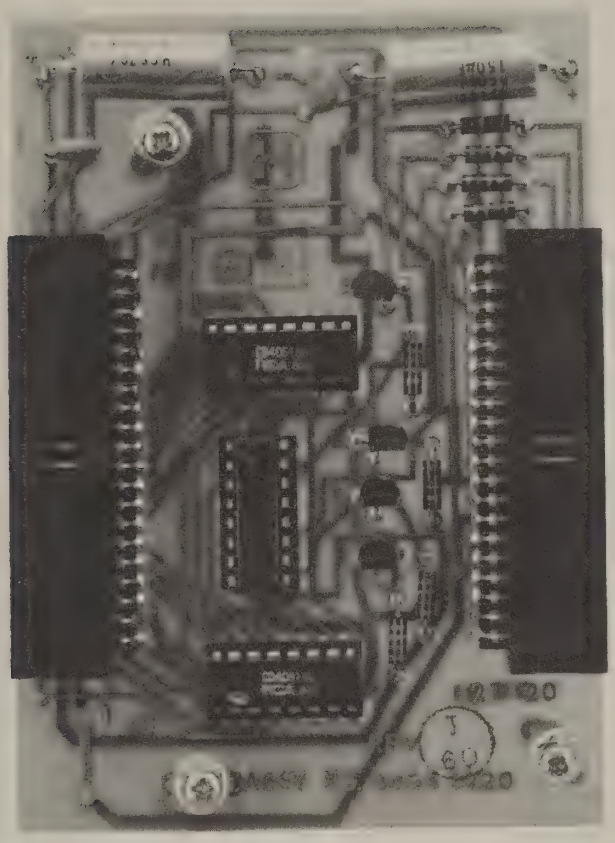
UNLESS OTHERWISE SPECIFIED.
ALL CAPACITOR VALUES ARE IN MICROFARADS.
ALL RESISTOR VALUES ARE IN OHMS.
IN 6624-3263 ASSEMBLY REMOVE RESISTORS: R1, R2, R3, R4, R5, R7

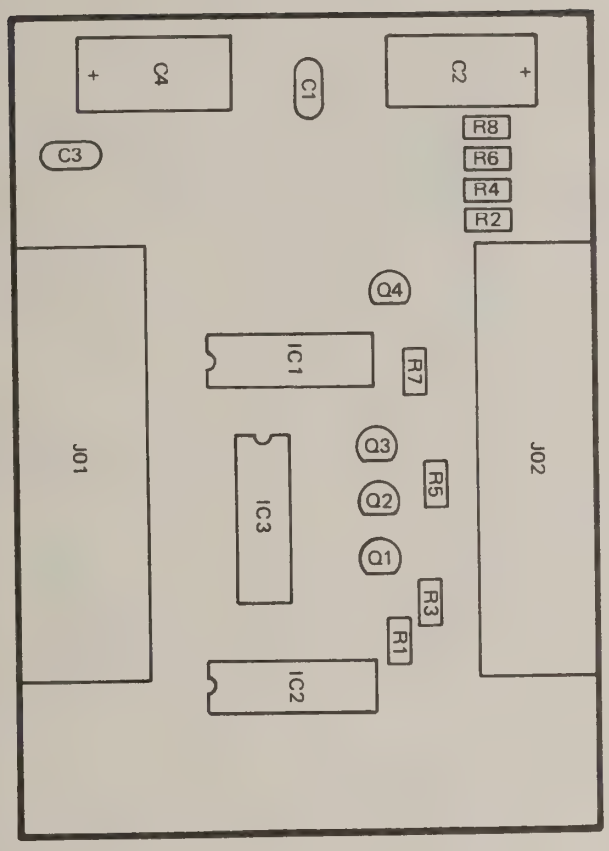
Figure 8-4. Logic Interface Board, 6624-3269 Revision A or B, Schematic Diagram (Covers Logic Interface Board Assemblies 6624-3261 and 6624-3263)

TABLE E

LOGIC INTERFACE BOARD, 6624-3269, REVISION AOR B; ASSEMBLY CONFIGURATIONS: 6624-3261 AND 6624-3263, PARTS LIST

Reference Designator	Name & Description	RF Part Number
	Common Parts	
C1, C2	Capacitor, Tantalum, 150 uF	C-5949
C3, C4	Capacitor, Ceramic, 470 pF	C-3508
C5, C6	Capacitor, Ceramic, Disc, 0.01 uF	C-4952
C7	Capacitor, Tantalum, 10 uF	C-6738
IC3	Integrated Circuit, MM74C906	I02-0006-000
R8	Resistor, 10K, 5%, 1/4W	R-1273
J01/J02	Connector, 40 pin	J-0436
	Assembly 6624-3261	
R1-R8	Resistor, 10K, 5%, 1/4W	R-1273
IC1, IC2	Integrated Circuit, CD4051BE	IC-0367
Q1	Transistor, 2N4124	Q-0385
JP2	Jumper	MP-1142
	Assembly 6624-3263	
JP5-JP8	Jumper	MP-1142





NOTE

THIS PRINTED CIRCUIT ASSEMBLY INTERFACES WITH MOTOROLA AND GENERAL ELECTRIC VHF MJ RADIOS ONLY.

Figure 8-5. Logic Interface Board Assembly, 6624-3220

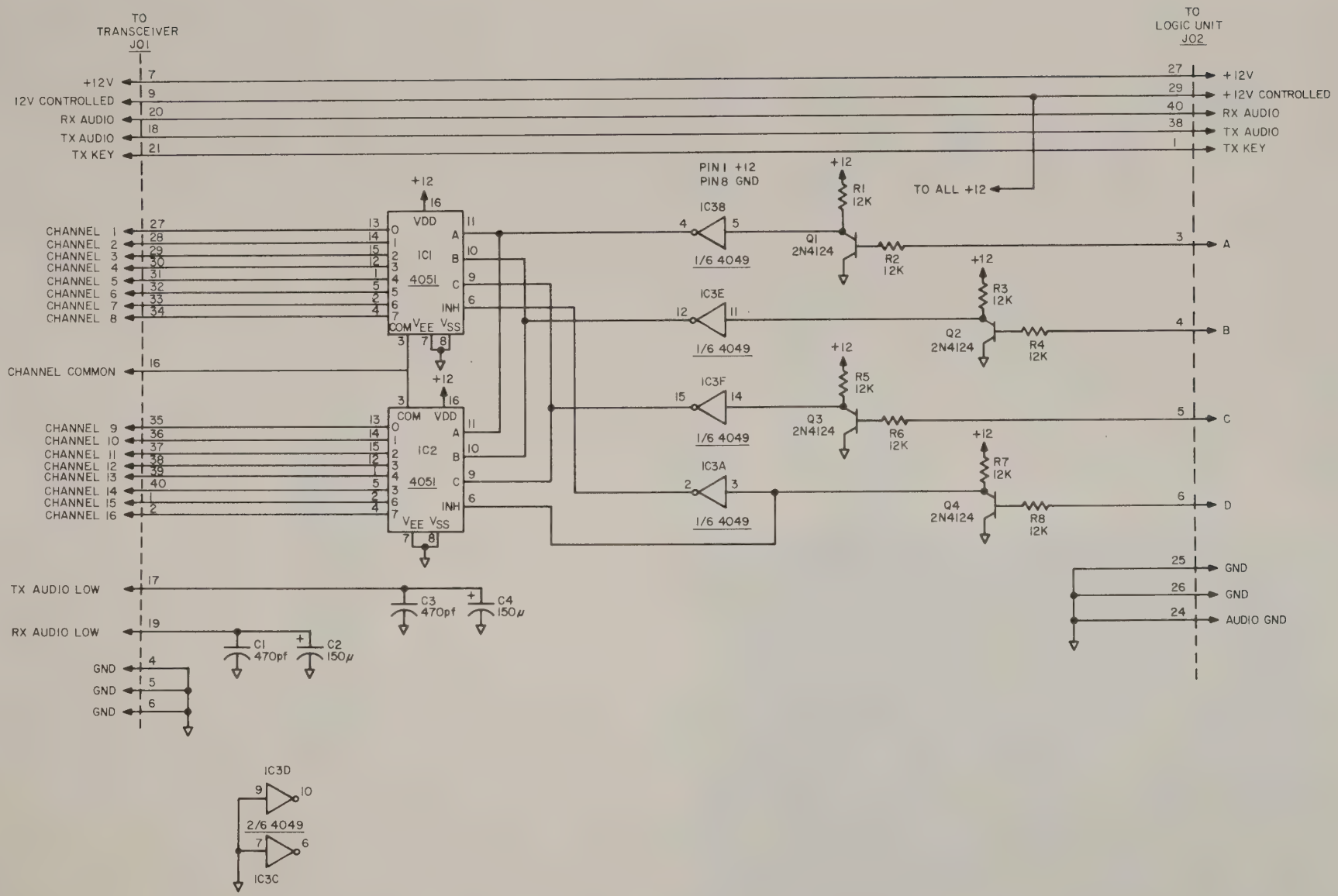
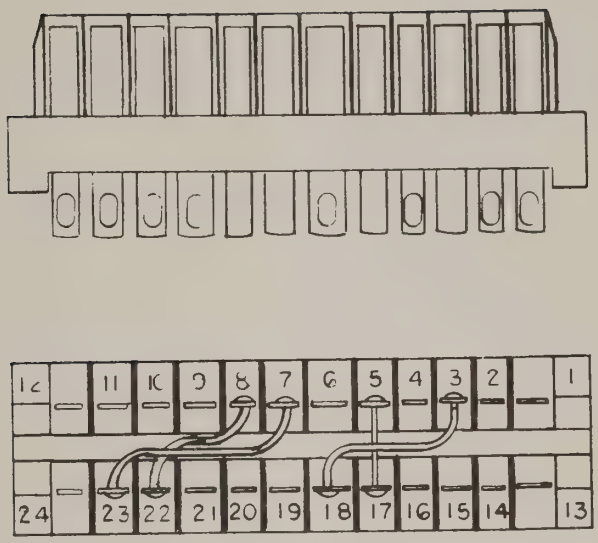


Figure 8-6. Logic Interface Board, 6624-3220, Schematic Diagram

TABLE F
LOGIC INTERFACE BOARD ASSEMBLY, 6624-3220, PARTS LIST

Reference Designator	Name & Description	RF Part Number
C1, C3	Capacitor, Ceramic, 470 pF	C-3508
C2, C4	Capacitor, Tantalum, 150 uFd	C-5849
IC1, IC2	Integrated Circuit, CD4051BE	IC-0367
IC3	Integrated Circuit, CD4049	IC-0369
J01, J02	Connector	J-0436
Q1-Q4	Transistor, 2N4124	Q-0385
R1-R8	Resistor, 12K, 5%, 1/4W	R-1275



USE 22 AWG WIRE INSTALL
AS FOLLOWS:

PIN	TO	PIN
3	——	18
5	——	17
7	——	23
8	——	22

Figure 8-7. MK/KS Jumper Plugs, Assembly and Schematic Drawings, 6624-3265

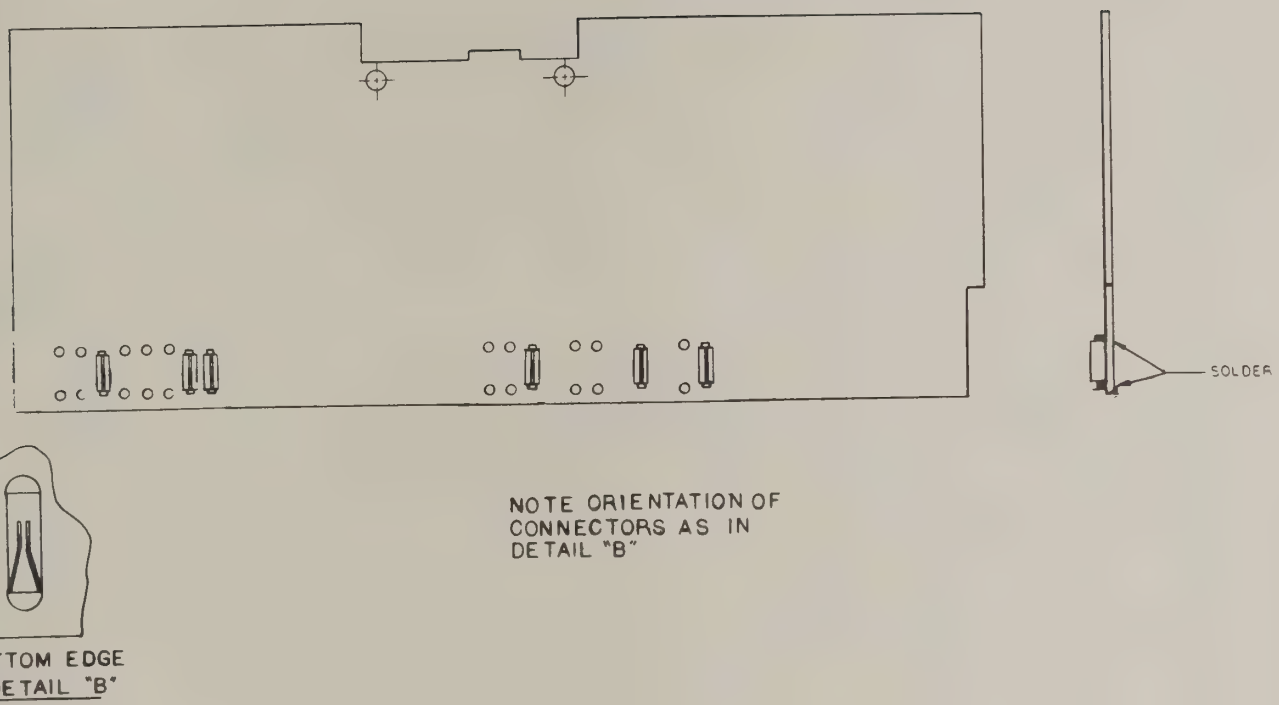
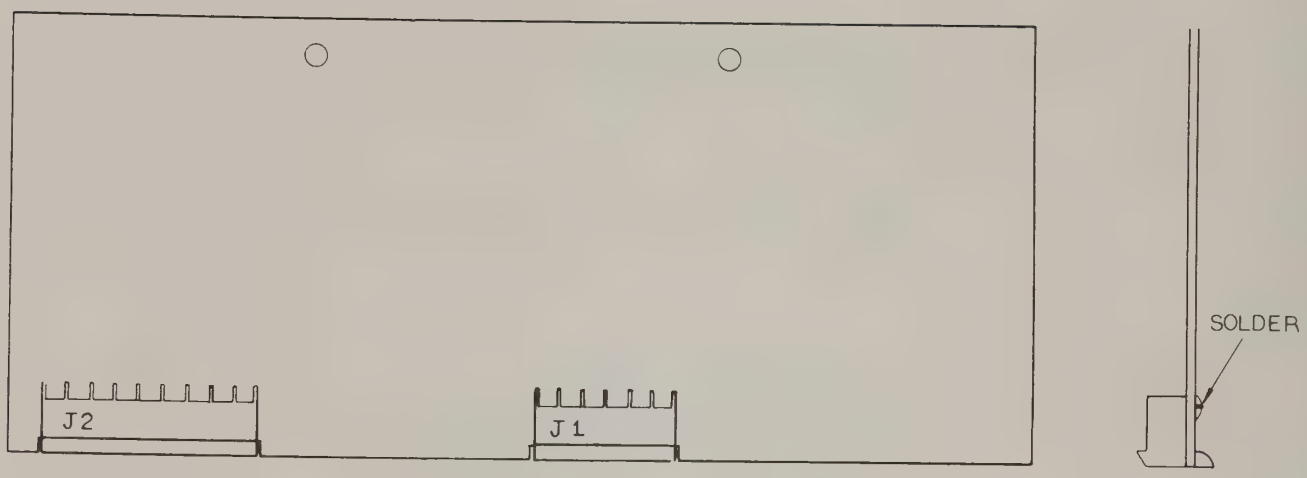
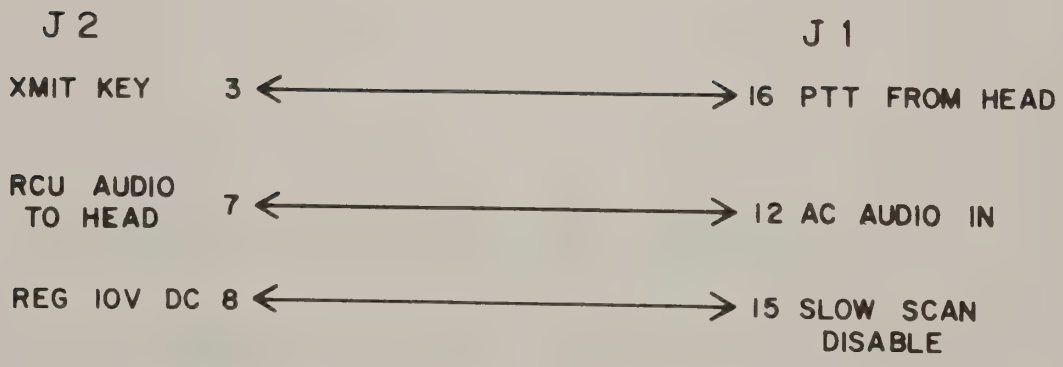


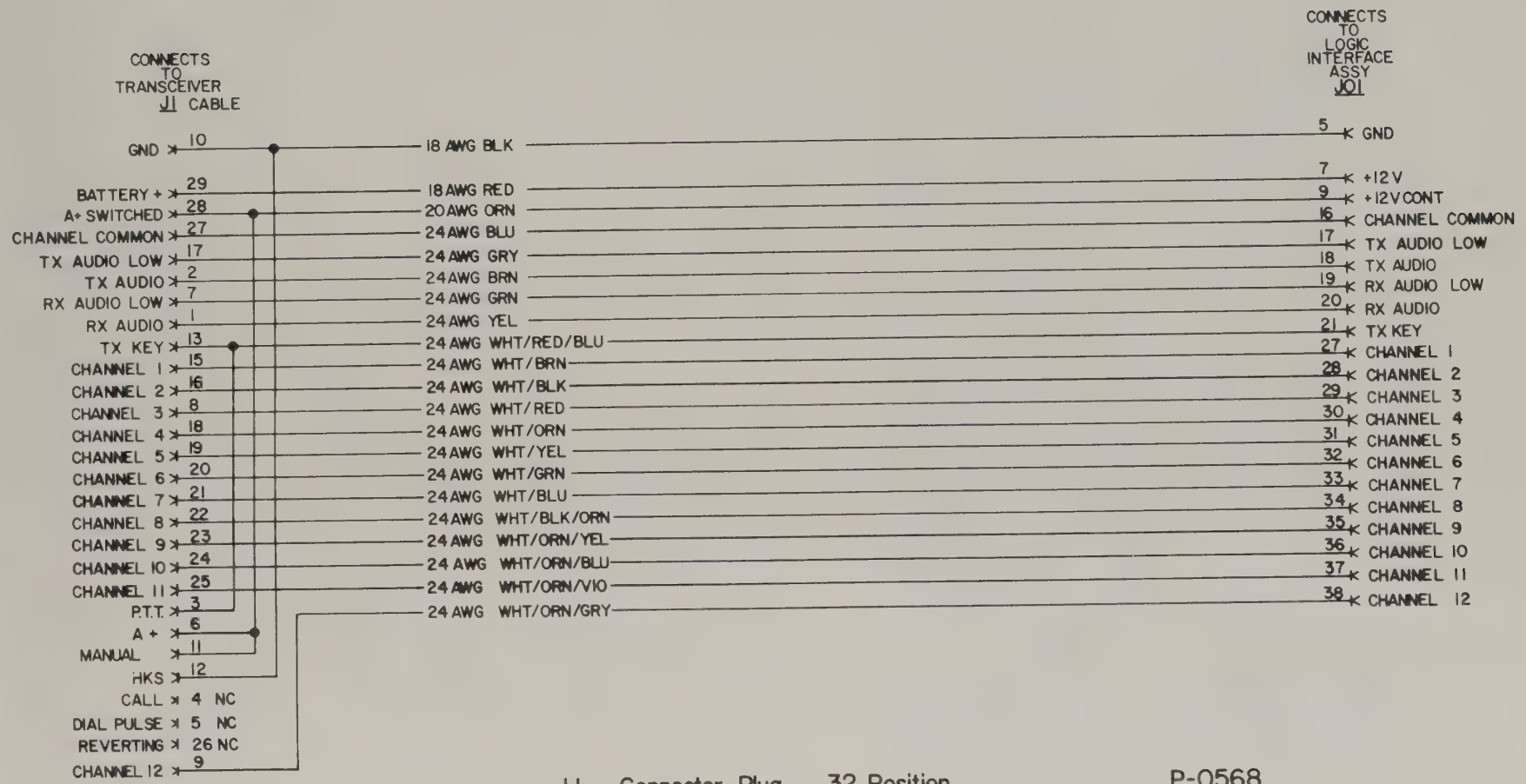
Figure 8-8. Motorola, VHF Pulsar® Supervisory Bypass Board, Assembly and Schematic Drawings, 6624-3270





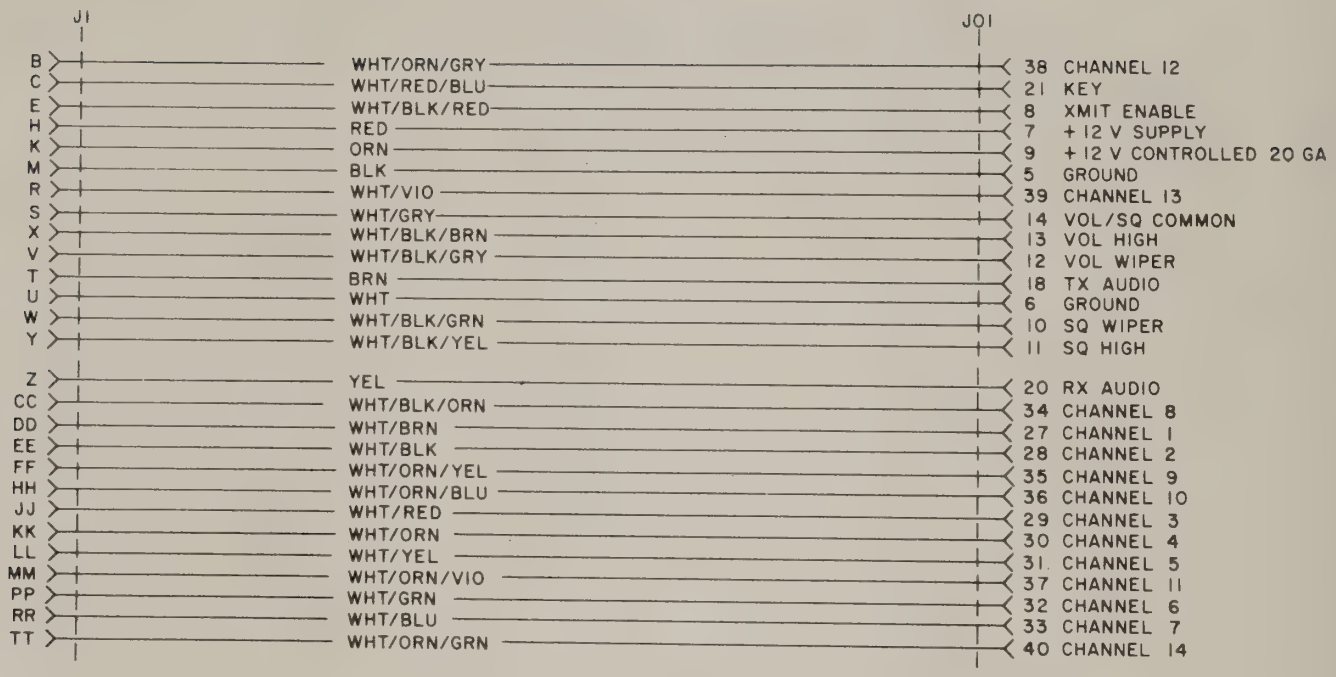
J1	6P Nylon, Connector Housing	J-41-0007-006
J2	9P Nylon, Connector Housing	J-41-0007-009

Figure 8-9. Motorola, UHF Pulsar®, and New VHF Pulsar® Supervisory Bypass Board, 6624-3280, Assembly and Schematic Drawings



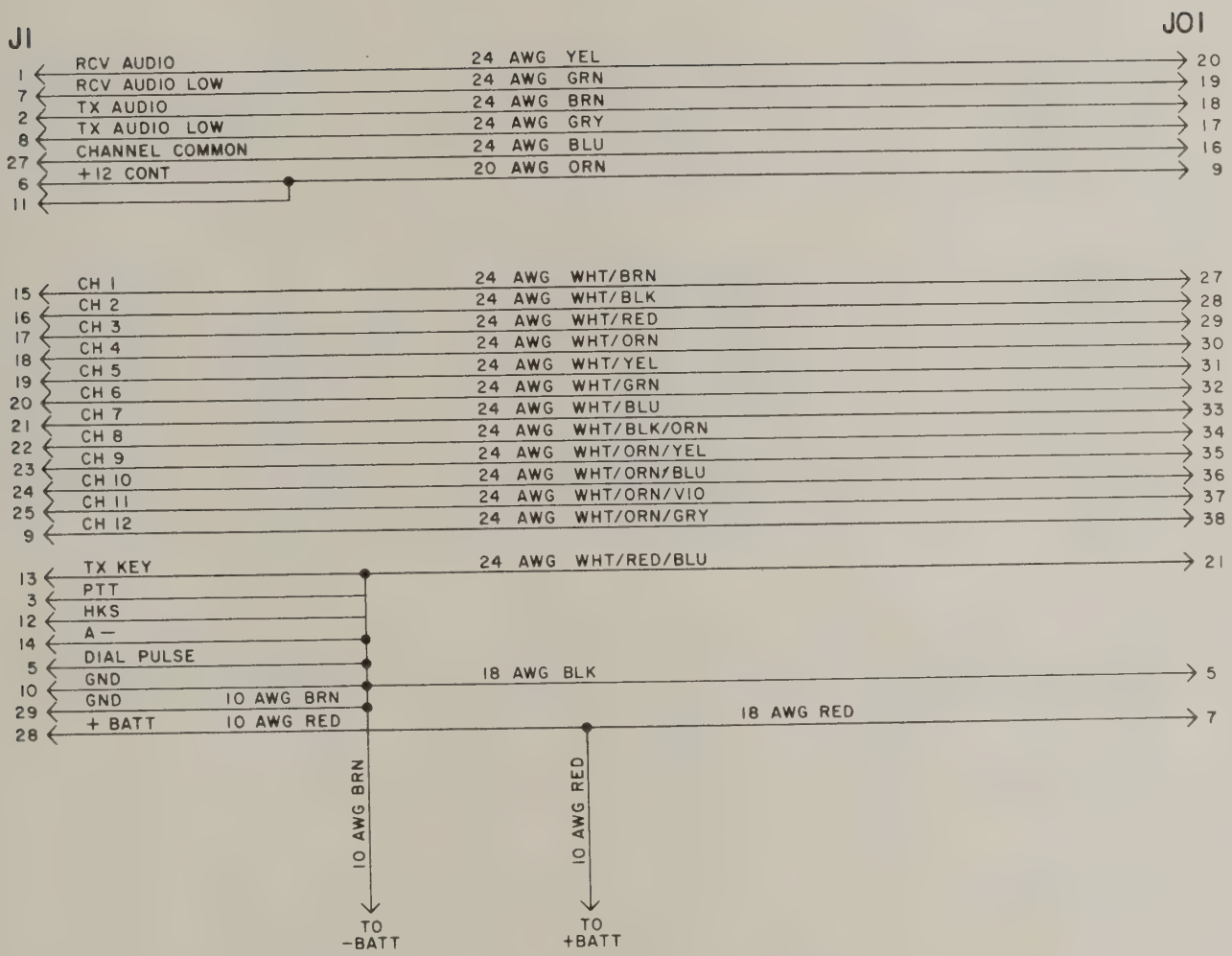
J1	Connector Plug, 32 Position	P-0568
J01	Connector, Receptacle, 40 Position	P-0566

Figure 8-10. "Pigtail" Cable, Logic Interface/Radio Cable (all Motorola and General Electric MJ) 6624-3245



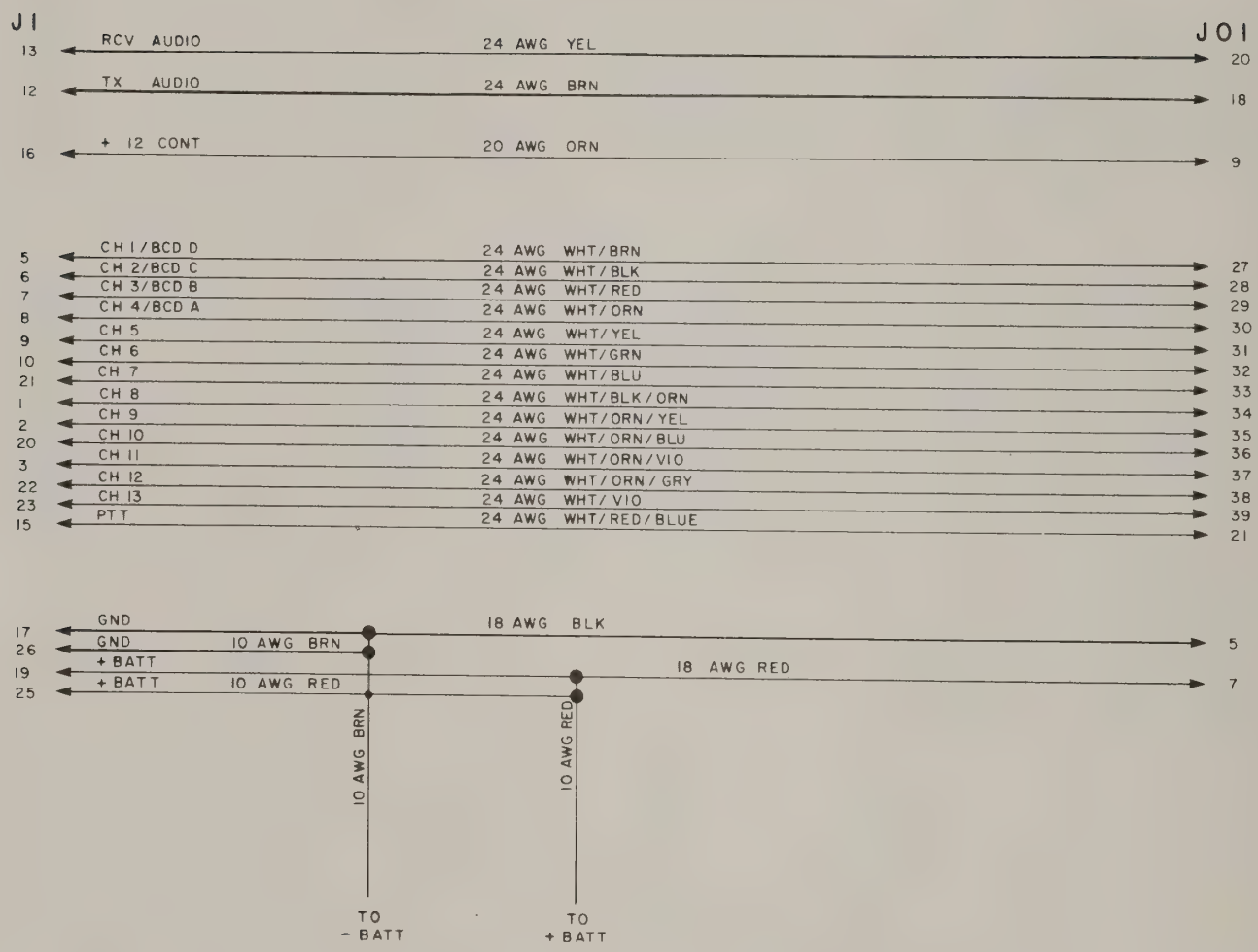
J1	Connector, Receptacle, 38 Position	J-0122
	Connector Hood	MP-1765
	Contact Pin	MP-0770
J01	Connector, Receptacle, 40 Position	J-0566

Figure 8-11. "Pigtail" Cable, Control Head Conversion (Harris and General Electric MASTR® Exec II) 6624-3246



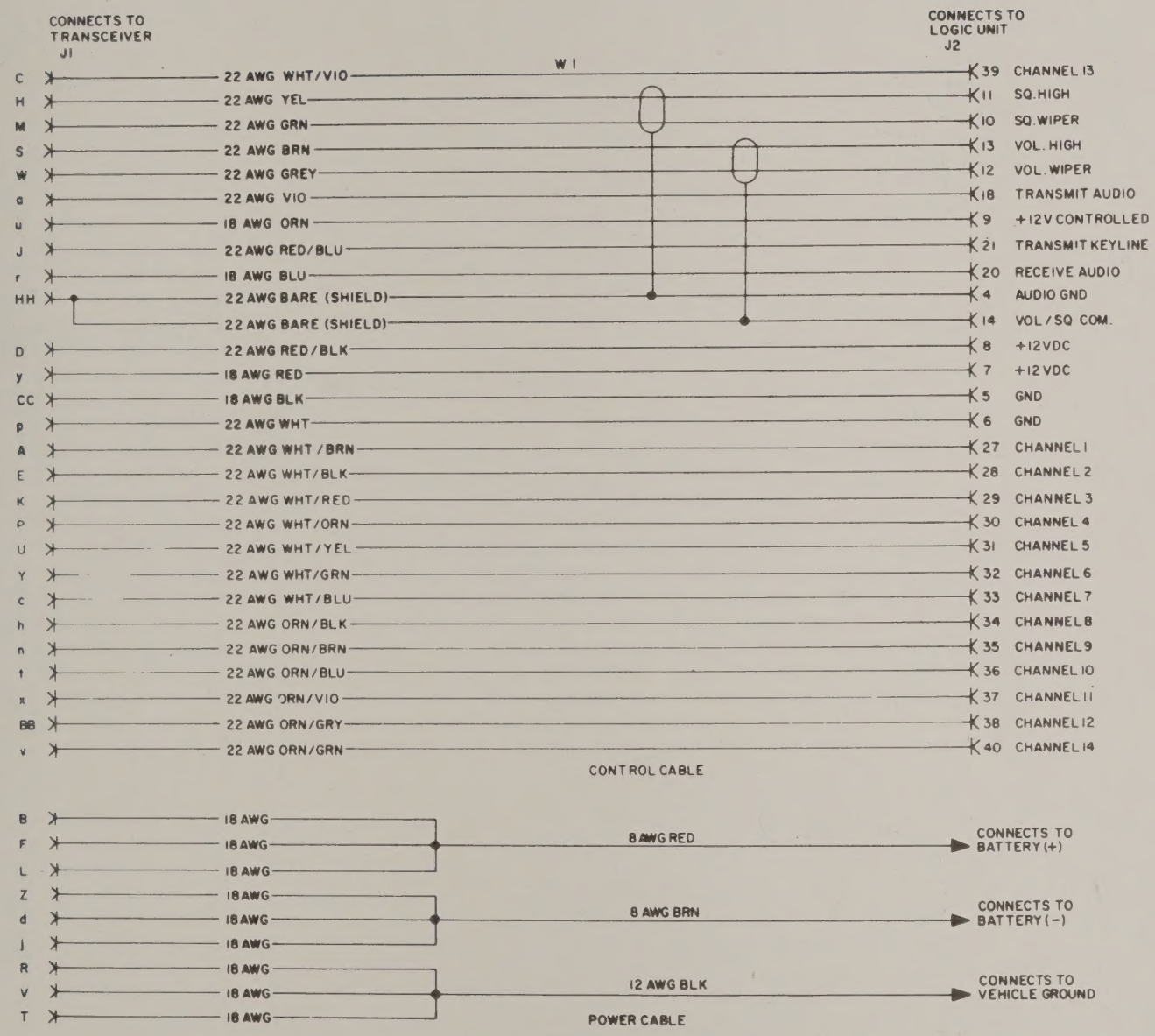
J1	Connector, 28 Pin	6624-3257
J01	Connector, Receptacle, 40 Position	P-0566
	Connector Housing	6624-3254

Figure 8-12. Full Radio Cable for All Motorola and General Electric MJ Radios, 624-5211



J1	Connector, 28 Pin	6624-3258
J01	Connector, Receptacle, 40 Position	P-0566

Figure 8-13. Full Radio Cable for General Electric MASTR® Exec II Radios, 6624-5221



J1	Cable Assembly	996-0208
J2	Connector, Receptacle, 40 Position	P-0566

Figure 8-14. Full Radio Cable for Harris RF-450A, CT-450 and CT-1555 Radios, 6624-5200

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